NOVA IMS Information Management School

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Mestrado em Gestão de Informação
Master Program in Information Management

Organizational transformation through Knowledge Management

An Internship at Luxembourg-Slovenian Business Club

Diogo Mendes Silva

Internship report presented as partial requirement for obtaining the Master Degree in Information Management, with a specialization in Knowledge Management and Business Intelligence

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ORGANIZATIONAL TRANSFORMATION THROUGH KNOWLEDGE MANAGEMENT:

An Internship at Luxembourg-Slovenian Business Club

by

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Advisor: José Borbinha, PhD

Internship Mentor: Nataša Zajec

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Por toda a vossa paciência e ajuda

ABSTRACT

The purpose of this report is to describe a five month internship that the student did at the Slovenian non-profit organization Luxembourg-Slovenian Business Club (LSBC). This internship report stands as partial requirement for obtaining the Master Degree in Information Management with specialization in Knowledge Management and Business Intelligence. Methodologies and the framework followed were largely based on knowledge acquired through the guidance of Nova IMS Information Management Master.

The main objective of this internship was to better understand the impact of information on a business context and how to foment a knowledge-based environment. In-depth, the aim was determining the information flow as it stands, identify bottlenecks and help growing a knowledge creation culture while shortening the gap inside the organization and between the organization and its members (both individuals and organizations). The main areas affected by this internship were Knowledge Management, Information Systems and Enterprise 2.0.

This report starts by giving an introduction to context and goals where the internship is inserted upon, followed by a detailed description of the background of the organization itself. After this section, it follows literature background focused on Knowledge Management areas - all subjects that were relevant for the internship practical work. Subsequently, an explanation of the of internship objectives and the path to achieve them is further discussed. Also, a presentation of the completed tasks results, followed by a critical opinion about them. Finally, possible future work endeavours that can follow up this project are then present as well as a pragmatic reflexion of the internship.

As a result of this report, improvements in information handling and some applied methodologies regarding Knowledge Management will be integrated in the organization. Hopefully, it will also bring to this organization new opportunities to develop business, to establish new partnerships while simultaneously expanding LSBC network of contacts.

KEYWORDS

Communication and Collaboration; Digital Asset Management; Knowledge Management; Information Systems; Enterprise 2.0

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LIST OF ABBREVIATIONS

CRM	Customer Relationship Management
CSFs	Critical Success Factors
DAM	Digital Asset Management
DIKW	Data Knowledge Information Wisdom
E2.0	Enterprise 2.0
ECM	Enterprise Content Management
ERP	Enterprise Resource Planning
EU	European Union
IM	Information Management
IMS	Information Management School
IS	Information Systems
IT	Information Technology
KM	Knowledge Management
KMS	Knowledge Management System
LSBC	Luxembourg-Slovenian Business Club
NPO	Non-Profit Organization
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
RSS	Rich Site Summary
SECI	Socialization, Externalization, Combination and Internalization
SM	Social Media

1. INTRODUTION

Nowadays, Knowledge Management has changed the way in which organizations are conducting business and compete with each other (Abdul-Gader & Kozar, 1995). Previous research has shown that information technology may indeed contribute to the improvement of organizational performance (Kohli & Devaraj, 2003). Therefore, organizations continue to invest large amounts of money in Knowledge Management, in anticipation of a material return on investment. Knowledge Management is a term that englobes all the systems and processes within an organization for the creation and use of corporate knowledge. Nonetheless, it is much more than just technology. It is also about the business processes that generate the creation and sharing of knowledge. In short, it deals with people, processes, technology and the organization itself.

Considering the importance of this concept, urged the motivation to address this issue. In this context, the student did an internship at Luxembourg-Slovenian Business Club (LSBC). This Slovenian non-profit organization (NPO) created on 2012 and headquartered in Luxembourg is an organization that "provides companies and start-ups with supportive and extensive network for B2B partnerships on desired market and exchange of business related knowledge, best practices and experience within the community" (*About Us*, n.d). LSBC is using advanced business networking which already resulted in an emerging community of cross-regional operating and collaborative-minded entrepreneurs.

The aim of this internship was to provide support to Knowledge Management creation processes of the organization by acquiring responsibilities of administration of all shared digital communication and creating strategies, improve knowledge management processes and act as an enabler of digital transformation in this organization.

"Information only becomes knowledge in the hands of someone who knows what to do with it"

Drucker P. (1999)

2. INTERNSHIP CONTEXT

This internship was taken under the Erasmus+ program and occurred between the 1st of October 2016 and the 28th of February 2017 (Annex I). Erasmus+ is an European academic program which its goal is to aid students to make a transition from a scholar to a workforce environment. Furthermore, due to the fact that is an experience abroad, additional benefits are also participating in an international work context combined with the necessary adaptation to culture and labour practices of the receiving organization.

Luxembourg Slovenian Business Club (LSBC) (Figure 2.1) is a non-profit organization with registered seat in Luxembourg and supported by Chamber of Commerce and Industry of Slovenia and SPIRIT Slovenia, Public Agency for Entrepreneurship, Innovation, Development, Investment and Tourism.

The main purpose of organizations such as LSBC is to enhance economic development and expose members of the club to new markets, new opportunities and practices inside the European Union (EU), by using LSBC network of contacts and the privileged relationship with Luxembourg. It also promotes an effective networking of ideas, human resources and assets abroad. This promotion is achieved by hosting various events and business fairs where contacts can be exchanged and business partnerships can be promoted. Mainly LSBC members are Slovenian companies that have a great deal of expertise in some area of business and need a push or mentoring to meet major business players in their area not only from Luxembourg but also from the rest of Europe too. Nevertheless, Luxembourg is an obvious target since it is a strategic entry point for businesses where most relevant companies have their headquarters as well as a leading financial centre, which makes a perfect stage for companies needing proof of concept and bigger challenges than the rest of the Balkan countries.

Currently, the non-profit sector is going through a profound regeneration process. These types of organizations are now required to deliver custom-made and high-quality services in order to overcome a shortage of resources and business environment complexity. For that reason, organizations are re-engineering their business core processes and organizational patterns. To achieve differentiation and excellence, all existing resources should be managed with increased effectiveness and efficiency, which puts knowledge in the spotlight. Knowledge Management is now one practice being explored and implemented by the non-profit sector to support strategic performance and operations.

Figure 2.1 – LSBC logo

Due to the fact we are considering a micro-organization (average of nine people) without a significant amount of resources, LSBC is lacking an Information System that centralizes the use of information. Because of that, LSBC is missing business opportunities and is dealing with inefficient daily processes, where information is coming either from the Web or from the real world. Therefore, it was identified an opportunity to build an Information System that can:

- Help managing digital information, through improvement of inflow and outflow communication by creating rules and procedures to share knowledge and shorten the gap between the organization and business agents
- Implement a routine procedure of turning client information into consistent and coherent data that can be stored in a Customer Relationship Management software
- Establish a Digital Asset Management policy that standardizes file storage and that makes the sharing of information more efficient inside the organization

LSBC organization is composed of three Senior Members of the Board, three Advisors to the Board and a multidisciplinary team that performs daily tasks. LSBC organization is structured as it is detailed in Figure 2.2.

During the length of this project, the intern only had the opportunity to work with team members above mentioned. Nonetheless, LSBC has more Advisors, Chairmen and technical people that help the organization move forward. The interactions between LSBC team members were made regularly on Skype or e-mail and monthly via in-person meetings, which provided evaluation and strategy delineation for the following month.

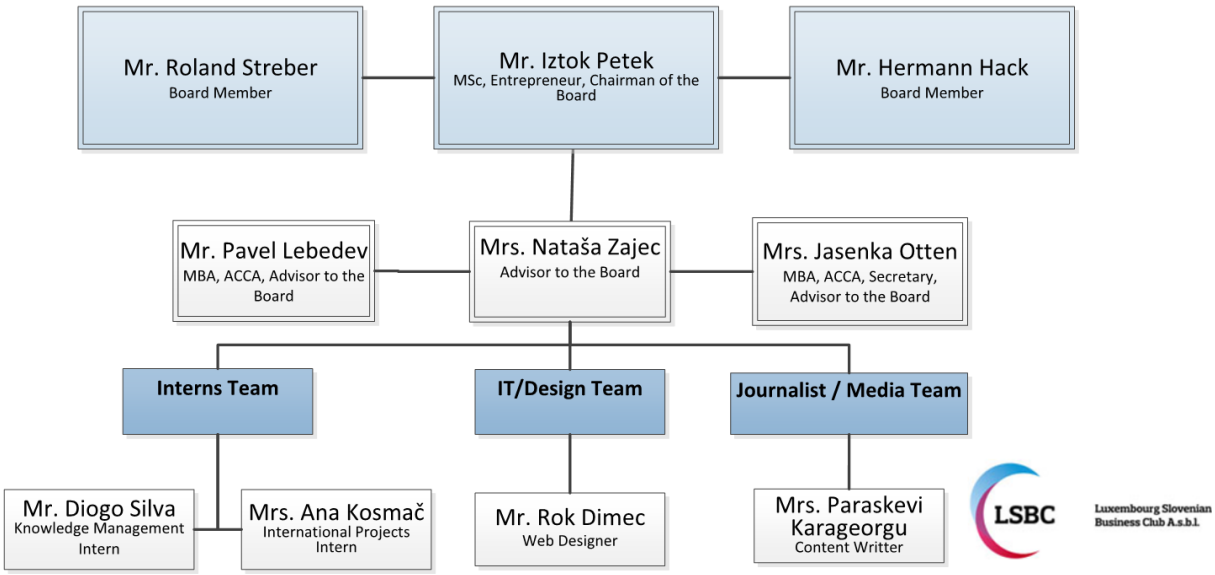


Figure 2.2 – LSBC organization chart

3. JUSTIFICATION FOR THE INTERNSHIP

The relevance of this internship can be certainly explained since the targeted area of study has high pertinence and applicability in the present business context. Knowledge Management seems to be the invisible basis and a key success factor for a successful organization. “Knowledge is now becoming the one factor of production, side-lining both capital and labour” (Drucker, 1998). The Organisation for Economic Co-operation and Development (OECD), an intergovernmental economic organization with thirty-five member countries, has endorsed that “the role of knowledge (as compared with natural resources, physical capital and low-skill labour) has taken on greater importance. Although the pace may differ, all OECD economies are moving towards a knowledge-based economy” (OECD, 1996).

Furthermore, business is more than ever merging with Internet and new digital trends. Immersing Knowledge Management and Internet can contribute for a powerful association, as O’Reilly (2007) clearly states “the business resolution in the computer industry caused by the move to internet as a platform and an attempt to understand the rules for success on that new platform” (O’Reilly, 2007).

As well as previous reasons stated, there were also other motives that the student Diogo Silva considered essential before ending the Master Program. Firstly, due to the fact that the student had already some experience in a Business Intelligence environment, working as an IT consultant for two years. Therefore the focus was to experience and develop Information and Knowledge Management capabilities which are the other areas of the Master. Lastly, it was also highly valuable for the student to have an international working experience on a European business context, which could improve adaptability and personal skills on an ever-increasing borderless professional context.

The targeted area subject of restructuration, elected in cooperation with LSBC was the Knowledge Management holistic approach to the organization. Consequently, were identified the following main challenges:

- Rethinking organization processes related to information handling and an organization communication strategy that should be supported by digital media (Social Network Sites, LSBC website)
- Intervention on poorly used Customer Relationship Management software due to lack of data updates
- A system that could be used as both central repository of digital media (documents, photos, videos) and platform to easily share these media between LSBC team

The subliminal improve point was on defining better internal processes regarding the management of information and allowing the ideal conditions to create and share knowledge inside the organization. The student saw in this organization an opportunity to freely explore knowledge - transfer workflows and to try out tailored solutions to create efficient processes inside the organization.

4. LITERATURE REVIEW

This chapter will provide the theoretical basis for the main concepts and themes faced during the internship. The first chapter focuses on Knowledge Management (KM), a field of study that encapsulates organizational and technology theories for knowledge creation and is currently being considered as an activity which can bring added value for companies. The second chapter deals with Information Systems (IS), an essential component to capture information and help executives make better-supported decisions. The third chapter centres itself on the exciting and new Enterprise 2.0 (E2.0), which brings the characteristics of Web 2.0 technologic world and puts it into business context.

4.1. KNOWLEDGE MANAGEMENT

*"*In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge*"*

Nonaka (1991)

4.1.1. Knowledge-based ecomony

For the past fifty years, there have been dramatic changes in business. Economists are now exploring ways to incorporate directly knowledge and technology in their theories and models. A new economy characterized by speed, intangibility and connectivity has emerged (Davis & Meyer, 1999). This velocity and dynamic nature has created a serious competitive environment in which innovation is needed to create value. Therefore, scholars and observers from disciplines as contrasting as sociology, economics and management science agree that another transformation has occurred – knowledge is at centre stage now. Knowledge and learning play fundamental roles in the successful evolution of organizations. But what is exactly knowledge? Davenport & Prusak (1998) define knowledge as "information combined with experience, context, interpretation and reflection". Knowledge is not a visible and cannot be materialized. For this reason, although it is an incredible challenging task, it is of high importance to extract, create, transfer and manage knowledge inside an organization.

The knowledge-based economy is a term used to express the correlation between knowledge and technology in economic growth. Knowledge, as it is embodied in human minds and in technology, has always been fundamental to the successful evolution of organizations and the promotion of Human progress through innovation. Its importance has been growing, but only over the last few years has its been fully recognized. Therefore, economies are more strongly dependent on the production, distribution and use of knowledge than ever before.

There is a common understanding that KM contributes for an organization competitive advantage (Marqués & Simón, 2006; Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Nonaka & Toyama, 2003;

Von Krogh, 2002). Acknowledging profits of exploiting existing knowledge and supporting new knowledge creation, organizations are now searching for opportunities to enhance KM practices and allocate the necessary means for their knowledge workers to succeed. Within organizations, where work depends on personal interactions with others, knowledge has both an active and a social dimension (Brown & Duiguid, 2000).

The KM function in the organization operates based on processes, develops methodologies and systems to support them and motivates people to participate. KM is a practice that aims the leveraging and improvement of the organization knowledge assets to effectuate better knowledge practices and decisions and improved organizational behaviours and performance.

Since knowledge-based economy works differently from traditional economic theory, measuring its performance may pose a greater challenge. At the centre of the knowledge-based economy, knowledge itself is particularly hard to evaluate and measure. Today, only very indirect and limited signs of growth using a knowledge creation approach have been recognized. Therefore, the relation between knowledge creation and economic performance is still practically unmapped. A very high percentage of knowledge is implicit, uncodified and stored only in the mind of the workers. There are various obstacles to the creation of intellectual capital to counterpart of conventionally fixed capital making intellectual capital may not be regarded as a worthy investment when compared with fixed capital. For this reason, it is necessary to understand and differentiate concepts strongly connected to KM.

4.1.2. Knowledge hierarchy

The process of building knowledge has been subject of studies for a long time. One of the core models of this studies is the data, information, knowledge and wisdom model (DIKW). Ackoff (1989) was the first to put all the terms into context and to assemble them in a model. Ackoff suggested a hierarchy which at the top lays wisdom and then below that understanding, knowledge, information and data, in that order. Furthermore, the author estimated that “on average about forty percent of the human mind consists of data, thirty percent information, twenty percent knowledge, ten percent understanding, and virtually no wisdom” (Ackoff, 1989, p. 3). Figure 4.1 shows one view of the DIKW hierarchy.

Rowley (2007) argues that this hierarchy is used to contextualize data, information, knowledge and sometimes wisdom with respect to one another. Conceptually, the idea is that building knowledge comes from a gradual process formed by assembling data. Furthermore, the author identifies and describes processes involved on the transformation of an entity from the lowest level in the hierarchy (data) to an entity at a highest level in the hierarchy (wisdom).

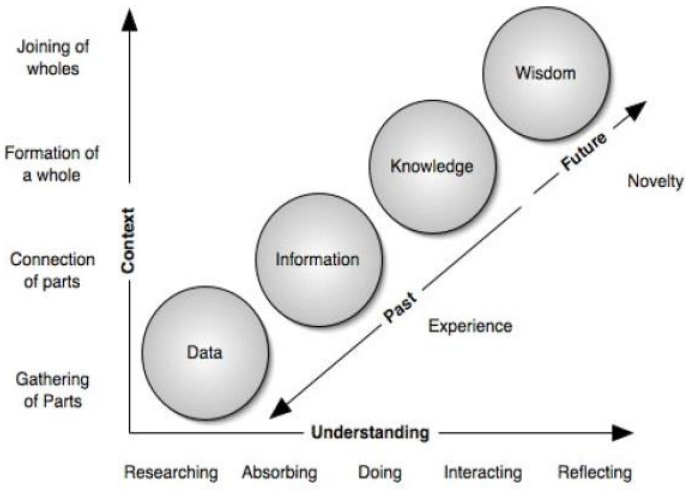


Figure 4.1 – DIKW hierarchy (Clark, 2004)

In the DIKW hierarchy, data is just a basic raw fact that will be useful only if evolves to information, knowledge and wisdom. As one grows in the hierarchy, a higher level of understanding and context from the humanistic side is also required. Although unclear boundaries of the core concepts of the DIKW hierarchy, there is a relative consensus when defining each level of the pyramid. These four concepts can be described as it follows:

- **Data** is the basis of the DIKW pyramid and is considered to be facts and figures which refer to something specific, but which are not organized in any way that provides any further information regarding patterns and context. Ackoff (1989) elaborates data as raw substance that can exist in any form, usable or not and that does not have meaning for itself. Rowley (2007), characterizes data "as being discrete, objective facts or observations, which are unorganized and unprocessed and therefore have no meaning or value because of lack of context and interpretation"
- **Information** is the second level of the hierarchy. For data to become information, it must have a background, categorized, calculated and condensed (Davenport & Prusak 2000). Essentially information is found "in answers to questions that begin with such words as who, what, where, when, and how many" (Ackoff, 1989). Also, it may suggest a trend or possibly imply a pattern for a given period of time. In this phase, the human brain is mainly needed to assist in contextualization
- **Knowledge** sits on the third level of the pyramid. To define knowledge is not an easy task, since it is a complex and ambiguous term, which has generated wide debate in literature. Knowledge results from a far more complex process that is social, goal-driven, contextual and culturally-bound. Then, knowledge is described as actionable information meaning information combined with understanding and capability, which is closely linked to doing and implies know-how and understanding. The knowledge possessed by each individual is a product of his experience and encompasses the norms by which he evaluates new inputs from his surroundings (Davenport & Prusak, 1998)

- **Wisdom** stands at the top of the pyramid. Reaching the wisdom tier is triggered by a process in which people synthesize new knowledge from the previously held knowledge. For Bellinger, Castro & Mills (2008) it is an extrapolative and non-deterministic, non-probabilistic process and it calls upon all the previous levels of consciousness and specifically upon special types of human genuine cognitive properties (intuition, moral and ethical codes, etc.). According to Rowley (2007, pp 5-6), "wisdom adds value, which requires the mental function that we call judgment. The ethical and aesthetic values that this implies are inherent to the actor and are unique and personal"

4.1.3. Knowledge creation

Now that we have set clear boundaries between terms wisdom, knowledge, information and data it is possible to go one step further and look at the forms in which knowledge exists and different ways that it can be accessed, shared and combined. Nonaka, along with several co-authors (Takeuchi, 1995; Toyama, 2003; among others) have been writing for more than one decade about KM, with the purpose of understanding how organizations can enable continuous knowledge and exploit its benefits.

In order for KM to succeed, one needs a deep understanding of the forms knowledge assumes. For that, there can be distinguished two types of knowledge:

- **Implicit knowledge** - resides in Human minds, comes from experience and practice and is functionally distinct from explicit knowledge
- **Explicit knowledge** - refers to manuals, books, printed material and guides that express information clearly through language, images, sounds or other means of communication

Several implications may rise from this elementary distinction of knowledge types. Firstly, the explicit-implicit relationship is an essential basis for knowledge creation in a company. Authors argue that the most crucial organizational and inter-organizational method of knowledge creation is the conversion of implicit to explicit knowledge. Thus, the challenge of the knowledge creating company is ensuring its successful conversion. Nonaka was one of the first to acknowledge ongoing knowledge creation as the source of continuous innovation and therefore sustained competitive advantage.

This understanding emphasizes that knowledge is essentially related to human action and traditionally defined as a justified truthful belief, since "knowledge is a dynamic human process of justifying personal belief toward the truth, (…) is essentially related to human action, (…) is about beliefs and commitment" (Nonaka & Takeuchi, 1995, pp. 58-59). This definition clearly recognizes the "absolute, static and nonhuman nature of knowledge, typically expressed in propositions and formal logic" (Nonaka & Takeuchi, 1995, p. 58).

Based on the principle that knowledge and its process of creation are dynamic, Nonaka and other authors have elaborated a framework known as SECI process, which stands for: Socialization, Externalization, Combination and Internalization (Nonaka, 1994; Nonaka & Takeuchi, 1995; Nonaka et al., 2000 and Nonaka & Toyama, 2003). SECI describes the transformation that occurs between tacit

knowledge and explicit knowledge. According to authors above mentioned, explicit knowledge can be easily captured and materialized and therefore stored conveniently while tacit knowledge is more challenging since it is immersed in routine, action and beliefs (Nonaka et al., 2000). Therefore, Nonaka hypothesizes four modes of knowledge conversion that are created when tacit and explicit knowledge interact:

- **Socialization** (tacit to tacit knowledge) "is the process of converting new tacit knowledge through shared experiences in day-to-day social interaction" (Nonaka & Toyama, 2003). Tacit knowledge sharing is the result of interaction between individuals and may be expanded since in any organization employees not only share their experiences, mental models, beliefs and perspective, but they also share their reused experiences. This means that in addition to learning and transfer knowledge, socialization boosts creation through combined perspectives
- **Externalization** (tacit to explicit knowledge) is a process whereby "tacit knowledge is articulated into explicit knowledge, so that it can be shared by others to become the basis of new knowledge" (Nonaka & Toyama, 2003). The transformation of tacit into explicit knowledge is made by capturing information about knowledge and detail it into a physical or digital form. At this stage, the possibly vague metaphorical dialogue or non-conceptual observations are turned into explicit knowledge that becomes external to the subject
- **Combination** (explicit to explicit knowledge) is a process whereby "explicit knowledge is collected from inside or outside the organization and then combined, edited, or processed to form more complex and systematic explicit knowledge" (Nonaka & Toyama, 2003). Combination occurs when knowledge that has been formerly captured is then again synthetized, materialized and distributed amongst workers who can now access these materials and absorb into their practices. Hence, this is a process of systemizing individual ideas into a sharable knowledge system
- **Internalization** (explicit to tacit knowledge) is a process "where knowledge is applied and used in practical situations and becomes the base for new routines" (Nonaka & Toyama, 2003). It is the counterpart of socialization and refers to the successful transfer of knowledge from a material form to a person conscience. It is also understanding information, putting it into context with personal own existing knowledge. Once the person gains the ability to utilize new knowledge, this knowledge becomes successfully internalized. This is the stage where learning by doing is practiced, since individuals are internalizing the newly created explicit knowledge and converting it into tacit knowledge

This process is depicted as a spiral model of knowledge creating organization (SECI Model) shown on the below figure (Figure 4.2). Successive iterations of the process form a continuous spiral (Nonaka, 1994; Nonaka & Takeuchi, 1995; Nonaka et al., 2000 and Nonaka & Toyama, 2003), passing through the four stages above described, with each loop amplifying the knowledge to a higher-level knowledge-creating entity. This process will be boosted as the time passes due to involvement of reusable knowledge. In time effectively more knowledge will be available to organization.

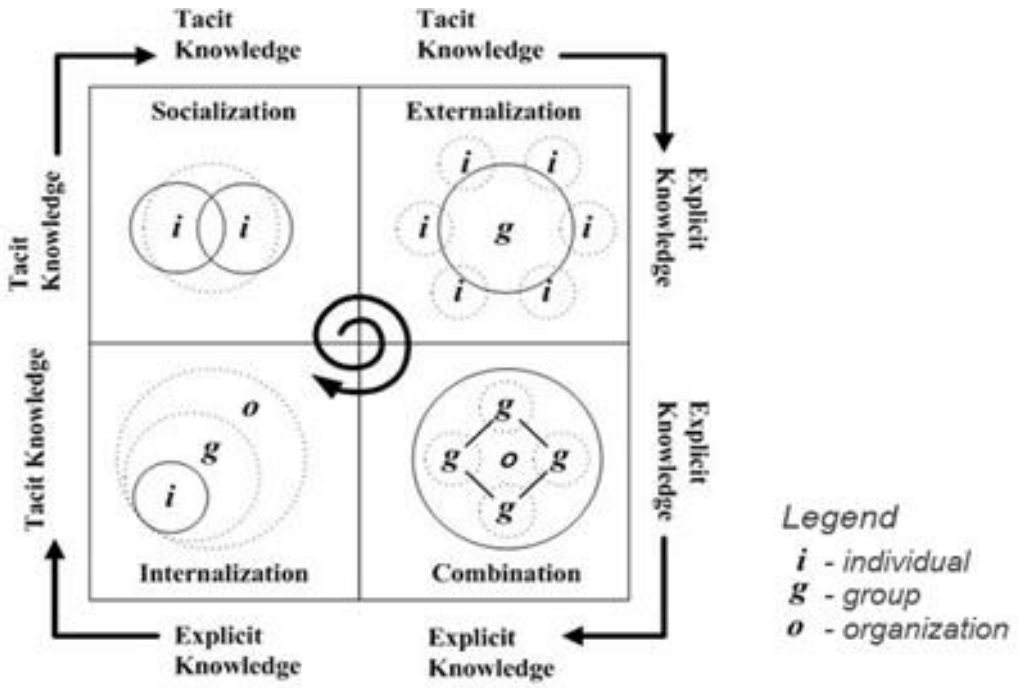


Figure 4.2 – SECI process (Nonaka & Konno, 1998)

Nonaka has also introduced a new concept in the knowledge management literature, Ba. Ba can be defined as a platform where the ideal conditions for knowledge creation are met and sharing occurs, representing a shared context for knowledge creation (Nonaka et al., 2000). Ba can be both physical (such as a training program, a project meeting, a conference, etc.) and virtual (such as a video-conference or teleconference, a social network system, etc.). Moreover, Junnarkar & Brown (1997) suggest that information technologies capabilities should be combined with the existence of an organizational environment favorable to knowledge sharing and knowledge creation. In order to create new knowledge, it is necessary to connect and transcend boundaries of various Ba on a constant basis, linking the knowledge created in them. With members of the Ba environment coming and going and forming self-organizing teams, organizational boundaries across various Ba must be permeable to capture all these exchanging movements.

Discussing Nonaka and Takeuchi view on knowledge creation and its importance is very enticing. However, there may be incoherent parts in their theory. The SECI model has thus never had a sound empirical grounding, which may call its status into question. Consideration of its theoretical soundness is beyond the scope of this internship report, but for example, the authors perspective namely how Japanese companies succeed in the innovation game through KM is considered to be their theory fragile spot. While going to great detail in revealing the fallacies and cultural biases in United States of America and European R&D mind-set, the authors remain overlooking problems in Japanese R&D culture.

4.1.4. Knowledgment Management (KM)

"KM is a discipline that promotes an integrated approach to identifying, managing, and sharing all of the enterprise information needs"

Gartner Group (2005)

The desire to share knowledge is something so genuine and it is exists for so long, it seems peculiar that KM has only recently emerged as a newly created practice. In that sense, KM describes both a business practice and an emerging theoretical field of study and is defined as a process through organizations generate value from their intellectual and using their knowledge-based assets. Generating value from such resources frequently involves sharing best practices among employees, departments and even with other companies. KM itself is the combination of various business practices, as described in Figure 4.3 and is immensely emerged in the organization. It also helps an organization gain insight and understanding from its own experience. Thus, specific KM activities focus in acquiring, storing and using knowledge for such things as dynamic learning, strategic planning and decision making.

Even though technology alone cannot deliver successful KM, it has long been its enabler. In addition, even the smallest organization uses technology of some sort. Technologies support new strategies, processes, methods and techniques to better create, disseminate, share and apply knowledge anytime and anyplace. Therefore, technologies can be broadly used to enhance KM spectrum.

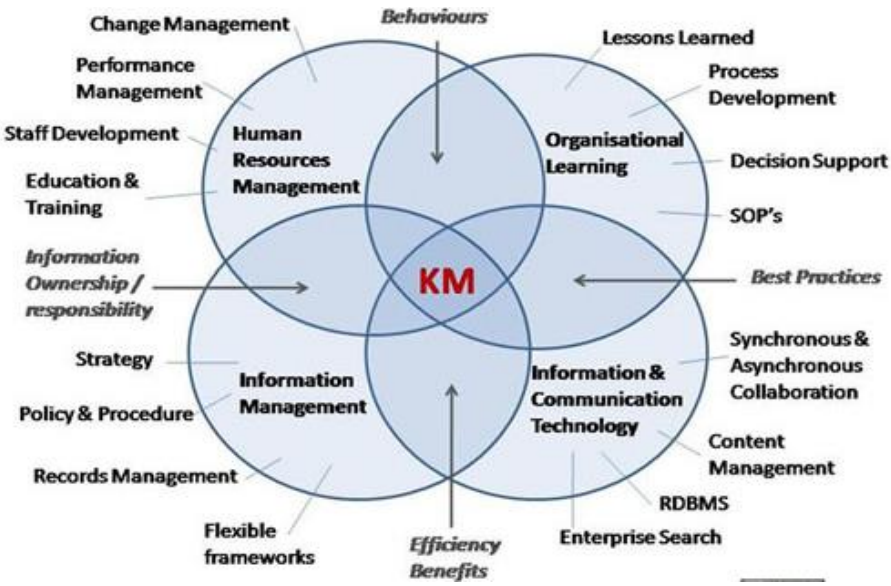


Figure 4.3 – Knowledge Management context (Cawthorne, 2009)

Junnarkar & Brown (1997) established a bridge between the need to invest in KM and the need to combine it with IT. According to both authors, effective KM requires a symbiosis between people, information and IT. For that reason, authors based on the ideas of the SECI process, established a match between the learning process and the existence of technology. Junnarkar & Brown (1997) also created a list of tools structured according to the effect on knowledge creation for each step of the SECI process:

- **Socialization stage** - facilitated by video teleconferencing and desktop video-conferencing tools and by the creation of knowledge virtual communities. Such tools have the advantage of enabling face-to-face meetings and exchange of ideas
- **Externalization stage** - mainly fostered by the use of e-mail and distribution lists where one can reach many users
- **Combination phase** - the stage where technologies have deeper impact and where the choice of applications is wider: e-mail, web technologies, internal websites on intranets, hypertext linking, search capabilities, amongst others. Edition, transfer and distribution of digital assets to employees is then possible in this stage
- **Internalization phase** - where results are interpreted and conclusions achieved based on the documents generated on the combination phase, with the help of data mining tools, simulation modelling and virtual applications

When considering the SECI model, Nonaka & Takeuchi (1998) suggest that the essential question of knowledge creation is establishing an organization Ba. Nonaka & Konno (1998) identify four types of Ba corresponding to the four modes of knowledge creation discussed above:

- **Originating Ba** - entails the socialization mode of knowledge creation and is the Ba from which the organizational knowledge creation process begins. Originating Ba is a common place in which individuals share experiences primarily through face-to-face interactions and by being at the same place and time
- **Interacting Ba** - associated with the externalization mode of knowledge creation and refers to a space where tacit knowledge is converted to explicit knowledge and shared among individuals through the process of dialogue and collaboration
- **Cyber Ba** - refers to a virtual space of interaction and corresponds to the combination mode of knowledge creation
- **Exercising Ba** - involves the conversion of explicit to tacit knowledge through the internalization process. Thus, exercising Ba entails a space for active and continuous individual learning

Understanding the characteristics of various Ba and the relationship with the modes of knowledge creation is important for enhancing opportunities for organizational knowledge creation. For example, to enhance the efficiency of the combination mode of knowledge creation, data warehousing and data mining, document repositories and software agents may be of great value. Considering the flexibility of modern IT, other forms of organizational Ba can be enhanced through use of various forms of IS.

The benefits of investing in KM have already been widely referred and proven in the literature (Holsapple & Wu, 2008; Marqués & Simón, 2006; Nonaka, Toyama, & Konno, 2000). The increased use of information technology in organizations is having a dramatic impact on the power relationships in organizations. Intellectual capital represents knowledge, methodologies and skills that exist in an organization. Thus, proper use of intellectual capital by managers and employees can give the organization competitive advantage in the marketplace.

4.1.5. Knowledge Management Systems

Nowadays, Grimes (2005) estimates that 80% of an organization business content is semi-structured or unstructured. Any type of organization is composed by: structured documents (reports, presentations and formal rules) semi-structured documents (e-mails, pictures and videos) and other unstructured tacit knowledge. Knowledge Management Systems (KMS) were created to face the archiving and sorting of an humongous amount of business content and the additional challenge that is to take knowledge from various sources.

Different definitions and understandings of a KMS may emerge. Generally, KMS are intended to organize, interpret and make widely accessible the expertise of an organization human capital, which helps to maintain a well-informed and productive workforce (Alavi & Leidner, 2001). Ruggles (1998), states three common functions of IT organizational KM initiatives:

- **Documenting and sharing the best practices** - KMS enables the transfer of internal best practices from employees knowledge which result in a better decision making
- **Creation of corporate knowledge directories** - mapping of documented internal expertise is a potentially useful application of KM
- **Creation of knowledge networks** - bridging people together virtually and face-to-face to exchange and build their collective knowledge in each of the specialty areas. Knowledge networks can be incited by, for example, providing online forums for communication and discussion

With all this in mind, many companies consider investing in KMS. According to Laudon & Laudon (2009) there are three major types of KMS (Figure 4.4):

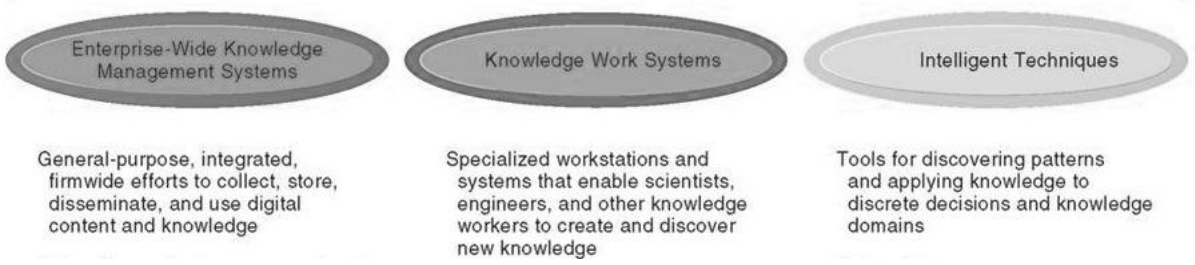


Figure 4.4 – Types of KMS (Laudon & Laudon, 2009)

- **Enterprise-wide Knowledge Management Systems** – general-purpose firm-wide systems that can be used by all members of an organization and are responsible to collect, store and distribute knowledge. Organizations also have specialized systems for knowledge workers to help them create new knowledge and to ensure that this knowledge is properly integrated into business. According to Laudon & Laudon (2009), they can be divided structured (formal documents), semi-structured (e-mails, voice memos, images, documents) and network knowledge systems (expertise of individuals)
- **Knowledge Work Systems** – highly specialized systems that rely on powerful graphics, analytical tools and document management capabilities to do complex treatments of

knowledge. These systems are necessary for such knowledge workers as scientific researchers, product designers and financial analysts. Knowledge workers are critical to the organization since they keep the organization current in knowledge, serve as internal consultants regarding areas of their knowledge and act as change agents inside the organization

- **Intelligent Techniques** – typically used for diagnosis, selection, prediction, classification, clustering, optimisation and control. Furthermore, they allow organizations to capture individual and collective knowledge, while generating new knowledge at the same time. The choice of tools for constructing an intelligent system is influenced by the problem type, the accessibility of data and also the content of the necessary solution. Intelligent techniques include: Data Mining; Neural Network; Expert Systems; Case-based reasoning; Fuzzy logic; Genetic Algorithms; Intelligent agents (Laudon & Laudon, 2009, p. 446)

New technologies act as intelligent agents and assistants to search, summarise, conceptualise and recognise patterns of information and knowledge are rapidly emerging. In doing so, the scope and depth of information to which individuals are potentially exposed increases. As this level of exposure increases, the internalization mode of knowledge creation, wherein individuals make observations and interpretations of information to result in new individual tacit knowledge, also increase.

4.1.6. KM Critical Success Factors

A broad range of factors that can influence the success of KM implementation has been mentioned in literature. For example, much has been written about culture, information technology and leadership as important considerations for its accomplishment. According to Rockart (1979), critical success factors (CSFs) can be defined as “areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation”. Saraph et al. (1989) define CSFs as critical areas of decision-making planning that must be accomplished in order to reach effectiveness.

A knowledge-friendly culture is clearly one of the most important aspects contributing to a successful KM endeavour. Culture is conceivably the most challenging restraint that knowledge managers must deal with and it arises some key points that should be considered:

- **Positive orientation towards knowledge** - A culture that is positively oriented towards knowledge is one where learning on and off the job is highly valued and where hierarchy takes a back seat to experience, expertise and rapid innovation. This positive orientation is inevitably reinforced by the type of people a company is composed of. It is possible, to pursue knowledge at the expense of work-related objectives and this could be a downside of an overly knowledge-oriented culture
- **Absence of knowledge inhibitors in entreprise culture** - employees may be tempted to create always something new rather than exploiting the materials that they currently have, as it can be regarded as a sign of weakness and imitation. Notable examples where

culture seemed to inhibit a project objectives can be found in industries like journalism, creative agencies and telecommunications, which consider reusing knowledge a lack of creativity

- **Fit of KM with the existing culture** - KM initiatives that do not fit in organization culture probably will not thrive, so management needs to align its approach with its existing culture

Liebowitz (1999) proposed six key elements in order to make KM popular in organizations. The author recommended a KM strategy based on:

- Support from senior leadership
- KM infrastructure
- Knowledge ontologies and repositories
- KM systems and tools
- Incentives to encourage knowledge sharing
- Supportive culture

Accordingly, a question arises: why is KM culture so important and how does the dynamic nature of knowledge impacts KM projects? Below it is present some principles based on the previous discussion of knowledge that can be applied to toughen a KM culture:

- **Knowledge only prospers when learning -** knowledge is very tough to share without opportunities for people to collaborate together, hence special efforts to create work groups or teams must be performed. Organizations committed to sharing knowledge must provide a learning environment which encourages an organizational culture of conversation, informal and formal knowledge sharing sessions and open communication
- **KM programs and knowledge evolve at the same rate -** KM programs should be vigorous and energetic since knowledge itself is a force for innovation and creativity. Dynamic KM can only occur if an organization commits towards the sharing of knowledge
- **Knowledge repositories must have quality** - repositories that store knowledge artefacts must be robust and flexible enough to take frequent updates from all sectors of the organization. They should be kept current, accessible and coded in such a way as to allow seamless and intuitive accessibility
- **KM is not only based on processes -** although technology can assist with communication and knowledge artefact storage and transfer, knowledge is created by people and is intimately human. KM should not be confused with technology itself, and knowledge should not be confused with knowledge artefacts (tangible and intangible items)

4.2. INFORMATION SYSTEMS

"Information systems are interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization"

Laudon & Laudon (2009)

4.2.1. Definition

Information Systems (IS) is a discipline that has been around for over thirty years. Despite that, the core identity of IS has still been subject of debate among academics. There can be found in literature a number of publications and papers dealing with IS area (Table 4.1).

There is a lot of debate around the IS concept and its boundaries. Even the term IS itself is interpreted quite differently by different circles of scholars: either a narrow view focusing on the IT artefact as core subject matter of IS research or a broad view that focuses on the interplay between social and technical aspects of IT that is embedded into a dynamic evolving context. Also, IS can be interpreted as at least three different ways:

- **Technical system** - implemented with computer and telecommunications technology
- **Social system** - such as an organization in connection with its information needs
- **Conceptual system** - an abstraction of either the above

In an effort to formulate explicitly IS, some definitions arose. Silver et al. (1995) provided a view on IS which includes software, hardware, data, people and procedures. Bagad (2010) described IS as the combination of three essential components of a system: input, transformation and output. In such IS, inputs are data that is going to be subject of transformation. The transformation component of an IS processes inputs into an outputs, which is considered to be the final product of a system. This final system product should be the result of obtaining necessary information in a desired format (Currie, 2009).

Subject	Literature
Different perspectives	Seddon, 1991; Parker, et al., 1994; Holsapple, et al., 1994
Reference disciplines	Keen, 1991; Seddon, 1991; Avison, 1993; Holsapple, et al., 1994; Parker, et al., 1994; Walczak, 1999; Galliers, 2004
Theory debilities	Keen, 1991; Avison, 1993; Straub, et al., 1994; Gregor, 2002
As practice field	Hurt, et al., 1986; Keen, 1991; Avison, 1993, Shanks, et al., 1993
Research methodologies, models or frameworks	Ives, et al., 1980; Avison, 1993, Shanks, et al., 1993; Straub, et al., 1994; Baskerville & Wood-Harper, 1998; Galliers, 2004

Table 4.1 – Analysis of IS literature

According to Laudon & Laudon (2009), IS knowledge is essential for creating successful, competitive firms, managing global corporations, adding business value and providing useful products and service to customers. The authors stated above declare that nearly all core business processes and relationship with customers, suppliers and employees are digitally enabled.

All of the components that must come together in order to form an IS have been described in detail by Stair et al. (2008), as it follows:

- **Hardware** - refers to machinery. Includes the computer and its peripheral equipment: input, output and storage devices. Hardware also includes data communication equipment devices
- **Software** - refers to computer programs and the documentation to support them. Computer programs are machine-readable instructions that coordinate the computer on how to take data in, how to process it, how to display information and how to store data and information. Programs are generally stored on some input/output medium, often a disk or tape
- **Data** – facts and inputs used by programs to produce useful information. Like programs, data is generally stored in machine-readable form on disk or tape until the computer needs them
- **Procedures** - rules for achieving optimal and secure operations in data processing. They also govern the operation of a computer system by defining priorities in dispensing software applications and security measure
- **People** - systems must have people to interpret data and turn it into information, which is often overlook. According to Kaur & Aggrawal (2013) this is an unfortunate truth, since it is probably the component that most influence the success or failure of IS. This component involves all IS professionals and users who analyse organizational information needs, design and construct IS, write computer programs, operate the hardware and maintain software
- **Telecommunications** - hardware and software that facilitates fast transmission and reception of text, pictures, sound and animation in the form of electronic data

Baskerville & Myers (2002) suggest the notion of a knowledge-creation network to understand the motivations, qualifications and implications of the IS field. Within this network, different fields engage in intellectual discourse that involves the exchange of ideas. Such a perspective implies that the IS field is both a producer of ideas (exported to other fields) and a consumer of ideas (imported from other fields).

Since IS is an applied field, industry practitioners expect IS research to generate findings that are immediately applicable in practice. As stated by Kock et al. (2002) this is not always the case, as IS researchers often explore behavioural issues deeper than practitioners would expect them to do. This may render IS research results difficult to understand, which has led to criticism.

4.2.2. Classification

There is a long history of classification in the natural world such as with plants or animals. Classification is purely a method by which items can be categorized together so that they can be grouped together as single unit. The classification of IS different types is a useful technique for designing systems and discussing their application; it not however a fixed definition governed by some natural law. A type or category of IS is simply a concept, an abstraction, which has been created as a way to simplify a complex problem through identifying areas of unity between different things.

As it can be seen above, there is not a simple or even correct way to classify an IS. An IS commonly refers to a basic computer system but may also describe a telephone switching or environmental controlling system. Depending on how classification is created, almost any number of different types of IS can be obtained. Nevertheless, different kinds of systems found in organizations exist to deal with certain problems and tasks. Consequently, to classify IS into different types is a task that relies on division of responsibilities within an organization. Since most organizations are hierarchical, the way in which different classes of IS are categorized tends to follow the hierarchy. Often, IS are structured using a pyramid model (Figure 4.5) due to the different levels of operation found at an organization.

According to Marakas & O'Brien (2008) the applications of IS that are implemented in todays business world can be classified in several different ways. According to Patterson (2005) there are different categories of IS such as Data Processing Systems, Management Information Systems, Decision Support Systems and Executive Information System. In that sence, the most common and widely used types of IS are:

- **Transaction Processing Systems** - are operational-level systems at the bottom of the pyramid. According to Laudon & Laudon (2009) "a transaction processing system is a computerized system that performs and records the daily routine transactions necessary to the conduct business". This business data is usually obtained through the automated or semi-automated tracking of low-level activities and basic transactions and then converted in valuable information
- **Management Information Systems** - are management-level systems that are used by middle managers to organize, evaluate and efficiently manage departments within an organization. According to Hasan et al. (2013) Management Information System is a type of IS that uses database information to output reports, helping users and businesses make decisions based on extracted data. The highly structured information provided by these systems allows managers to evaluate an organization performance by comparing current with previous outputs
- **Decision Support Systems** - are often used to analyse data that is pulled from various sources and then reviewed by managers, who make decisions based on the compiled data. According to Shim (2000) a Decision Support System is a computer-based IS that assists managers making complex decisions, such as decisions needed to solve poorly defined or semi-structured problems. Therefore, a Decision Support System can be seen

as a knowledge-based system, by which it facilitates the creation of knowledge and allow its integration into the organization

- **Executive Information Systems** - are strategic-level IS that can be found at the top of the pyramid. According to Patterson (2005) an Executive Information System provides senior managers with a system to assist in taking strategic and tactical decisions. Also, Executive Information Systems are useful for examining business trends, allowing users to quickly access custom strategic information in summary form, which can be reviewed in more detail. These systems tend to be highly individualized and are often custom-made for a particular client

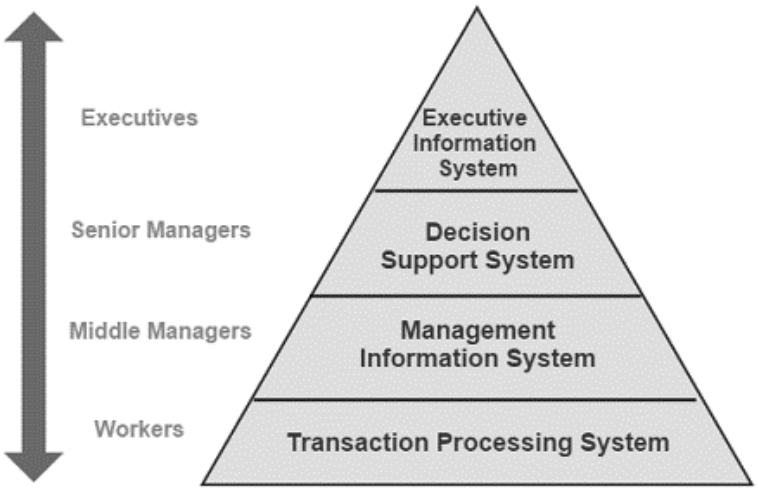


Figure 4.5 – IS classification in pyramid format

4.2.3. Frameworks and strategy

Over the last twenty-five years, the industrialized world has been making the transition from an industrial economy to an information economy. For the next several decades, information – rather than land or capital – will drive the creation of wealth and creativity (McGee & Prusak, 1993). Therefore, IS strategic management is gaining importance in today's organization. Also, it has been said that IS have dramatically altered the way organizations perform and design their operations and market their products (Porter & Millar 1985; Wiseman, 1988). Entirely new kinds of planning and control systems can now be built - ones that dynamically involve the manager judgment and support him with analysis, models and flexible access to relevant information. As the role of IS changes within an organization, leadership, organization design and management process also change.

To fully realize this potential, there must be an appropriate framework which allows to analyse management decision making and provides the required systems support. The need to develop effective strategies for managing an organization IS has drawn attention in the IS literature (Cash, McFarlan, McKenney & Applegate 1992). Gorry & Scott Morton (1971) indicate the utility of an IS framework, since it "allows an organization to gain perspective on the field of information systems and can be a powerful means of providing focus and improving the effectiveness of the systems effort".

Nonetheless, lack of common understanding on the concept of strategy as it relates to IS has been strongly commented on by Earl (1989). The author contends that there are, in fact, three levels of strategy – Information Management, IS and Information Technology strategy. Information Management strategy deals with management of the entire IS function; IS strategy deal with IS application and Information Technology strategy with the technology used for delivery of application systems. Earl states that there is common confusion between IS which is the end and Information Technology which is the mean, and this confusion exist "partly because of the loose terminology of planning and strategy in discourse and literature… and partly because senior management tends to be concerned about both technology policy issues and business needs and about both planning information resources and controlling them" (Earl, 1989, p. 62).

This three-level, comprehensive view of IS Strategy provides a conceptual foundation for developing operational measures of strategy and for testing various aspects of the linkages between IS and the achievement of organizational goals.

According to the author, organization strategy focus on the following points (Figure 4.6):

- **IS Strategy** is concerned primarily with the aligning of IS development with business needs and with seeking strategic advantage from IS applications
- **Information Technology Strategy** is concerned with technology policies including questions of architecture and security
- **Information Management Strategy** "is the management framework which guides how the organization should run IS/IT activities" (Earl, 1989, p.117). Information Management Strategy focuses on relationships between specialist and users, between the corporate level and divisions or business units. It is organizations-based, relationship-oriented and management-focused

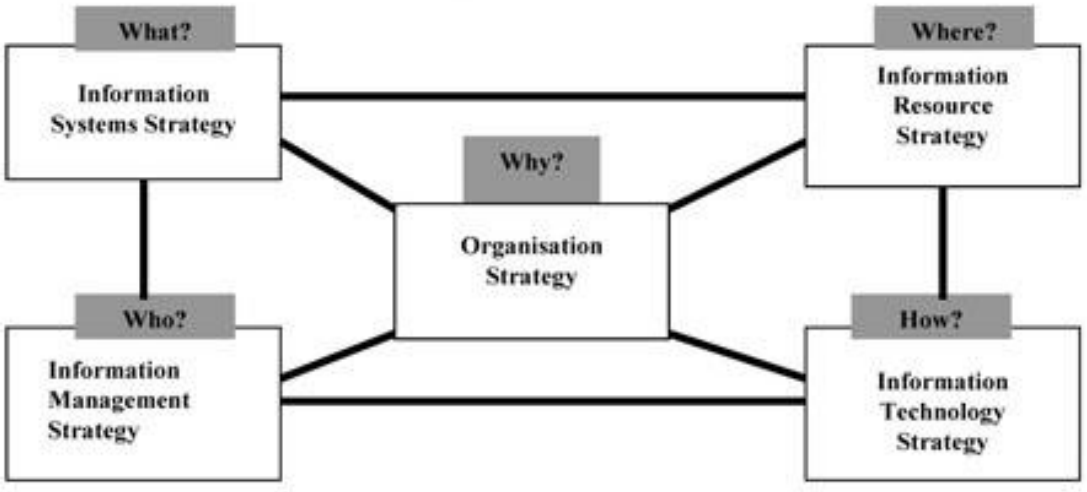


Figure 4.6 – Information Strategy Framework (Earl, 1989)

In summary, these frameworks provide a possible foundation for measuring the effectiveness of IS. They also facilitate the evaluation of such systems by reaching meaningful conclusions about the role of IS in helping achieve desired organizational performance.

4.2.4. Debate

IS is an interdisciplinary, applied discipline. As such, it has drawn from many other disciplines to address issues that reflect the centrality of IT in varied socio-economic contexts. The IS field has not only borrowed theories and models from other disciplines, but adapted them to better suit IT-embedded phenomena, thereby building a sizable portfolio of adapted theories, models, and concepts. Examples of such IS-adapted theories include the technology acceptance model (Davis, 1989), the IS implementation interaction theory (Markus, 1983), the adaptive structuration theory (De Sanctis & Poole, 1990) and the cognitive-affective model of organizational communication (Te'eni, 2001).

An extensive debate on the nature and legitimacy of the IS discipline, its dependence on other disciplines and the value of its theoretical and methodological diversity is registered in various thesis (Banville & Landry 1989; Benbasat & Weber 1996; Galliers 1995; Robey 1996). Noting that IS field lacks a clearly articulated core focus and set of theories, critics doubt IS can be a reference discipline for other fields (Baskerville & Myers, 2002).

In summary, referenced authors undoubtedly agree that both the nature, scope and ideal approaches to researching of the IS domain are not yet consolidated. This will impact the teaching of IS, since there is not a single clear theoretical basis for its study.

4.3. ENTERPRISE 2.0

"Enterprise 2.0 technologies have the potential to usher in a new era by making both the practices of knowledge work and its outputs more visible "

McAfee (2016), *Enterprise 2.0: The Dawn of Emergent Collaboration*

4.3.1. Definition

Nowadays, a fundamental revolution is occurring in how companies compete. In particular, the rise of Web 2.0 is enabling new business strategies and plans, which empower organizations to create differentiated value with lower costs and consequently bring competitive advantage. Web 2.0, an expression created to describe the use of internet capability to connect everyone and contribute with content, rapidly became a trend. Examples of this are the vastly known and used Social Network sites (*Facebook*, *Twitter*, *YouTube* and *Wikipedia*). In just a few years, Web 2.0 communities have proven surprizing levels of modernization, knowledge shareability, collaboration and collective intelligence.

Enterprise 2.0 (E2.0) takes the original concept of the Web 2.0, using websites and tools to feed content into the enterprise context. Consequently, E2.0 mirrors what the Web 2.0 does for the outside world: help employees, partners, suppliers and customers work together to build networks of like-minded people and share information.

Officially recognition of E2.0 term was attributed to professor Andrew McAfee for first seeing the potential to apply to business context the concepts of Web 2.0 tools, which until recently have been

used primarily by young people and college students to build social networks. Instead of a one-way conversation, E2.0 exposes the use to a multiparty conversation to share information and managing knowledge inside and outside the organization using blogs, wikis and social networking. The link among these tools is the ability of the individuals involved to participate and to control the process while they work together, share information and create networks of people with similar interests. According to McAfee (2006), E2.0 can be characterized by three factors:

- Simple and free platforms for self-expression
- Self emergent platforms chosen by the people rather than imposed ones
- Order from chaos: the ability to quickly and easily filter, sort and prioritize the flood of new online content

E2.0 makes clear that new technologies are good for much more than just socializing. When properly applied, they help businesses solve pressing problems, capture dispersed and fast-changing knowledge, highlight and leverage expertise, generate and refine ideas and harness the wisdom of crowds. The use of E2.0 empowers structures to take shape over time, which emphasizes the most remarkable feature of new technologies - its flexibility, since it does not impose fixed workflows, roles and responsibilities. E2.0 requires the organization to take the opposite approach from previous years as it allows people to freely create and refine content with almost no requirements.

This presents a new optimistic view regarding managing knowledge and sharing information tasks, a goal that goes back to the nineties when vendors began developing KM and content management solutions. Instead of trying to implement huge, all-encompassing Enterprise Wide Systems, the simpler web-based tools under the E2.0 umbrella strip away the complexity of the nineties technologies while carrying on the spirit of the ideas.

4.3.2. Enterprise 2.0 technologies: blank SLATES

E2.0 technologies, much compared to Web 2.0, are collectively labelled digital platforms for generating, sharing and refining information and knowledge. McAfee (2006) in the much noted acronym SLATES has identified six key components of these technologies:

- **Search** – allows users to freely look for information according to their needs. Therefore, a E2.0 should have a simple search
- **Links** – on the internet, Google was the first to use dense link structures and ranking pages based on how frequently other pages linked on them. Inside of an organization intranet, users need to do the same thing in order to achieve search relevancy
- **Authoring** - the paradigm has changed since the content shifted from being created by a few, to creation by many. Users naturally want the ability to share stories, knowledge insights and experiences
- **Tags** – users expect some degree of content organisation, which is possible due to the tagging mechanism. Tagging is a method based on an user action to sort content and to define the most popular and reliable content

- **Extensions** – are an extrapolation of the behaviour observed online to derive recommendations for future behaviour. They automate work categorization and pattern matching by using algorithms based on what users have visited previously, giving some recommendations on the process
- **Signals** – since users are constantly overflown with information every day, signals allow to select relevant and desired sources of information. Basically, they are subscription functions which make users aware of new content

4.3.3. Collaborative technologies

Digital collaboration is more than ever present in the world of business. Organizations in every industry are implementing collaborative software platforms that allow employees to produce more and improve the quality of the work delivered. According to Forrester Research study (2009) approximately 50% of companies in the United States use some kind of social software and a Prescient Digital Media survey (2009) revealed that 47% of respondents were using wikis, 45% blogs and 46% internal discussion forums.

A new social paradigm is pertinent for discussion since it enables transparency, trust, accessibility and conversation among organizations. Collective intelligence should be used to build a solid communication and task workflow so that every action and assignment becomes more efficient. E2.0 is not only technology related, but also a state of mind. It is not only a new approach to collaboration as it is a new philosophy to make the world more efficient and connected.

Though there is a broad agreement that Web 2.0 has enabled KM practice and enhanced the discipline (Levy, 2009), the fact that this is a relatively new discipline makes it harder to measure its value. Moreover, efforts are being driven to inventory, classify and categorize collections of tools and applications currently in use. Organizations are creating, replacing or upgrading their internal IS and some are developing their own social platforms to follow this trend. Others have adopted Web 2.0 tools and have a special focus in collaboration as it is believed to bring mid to long term returns.

E2.0 ensures benefits by augmenting opportunities for collaboration and by allowing knowledge to be spread more effectively. The use of automatic information feeds such as RSS or microblogs, of which Twitter is the most accepted one, are examples of these technologies. Although many companies use a mix of tools, McKinsey Survey (2009) (Figure 4.7) shows that among all respondents deriving benefits, the more heavily used technologies are blogs, wikis, social networking and video sharing.

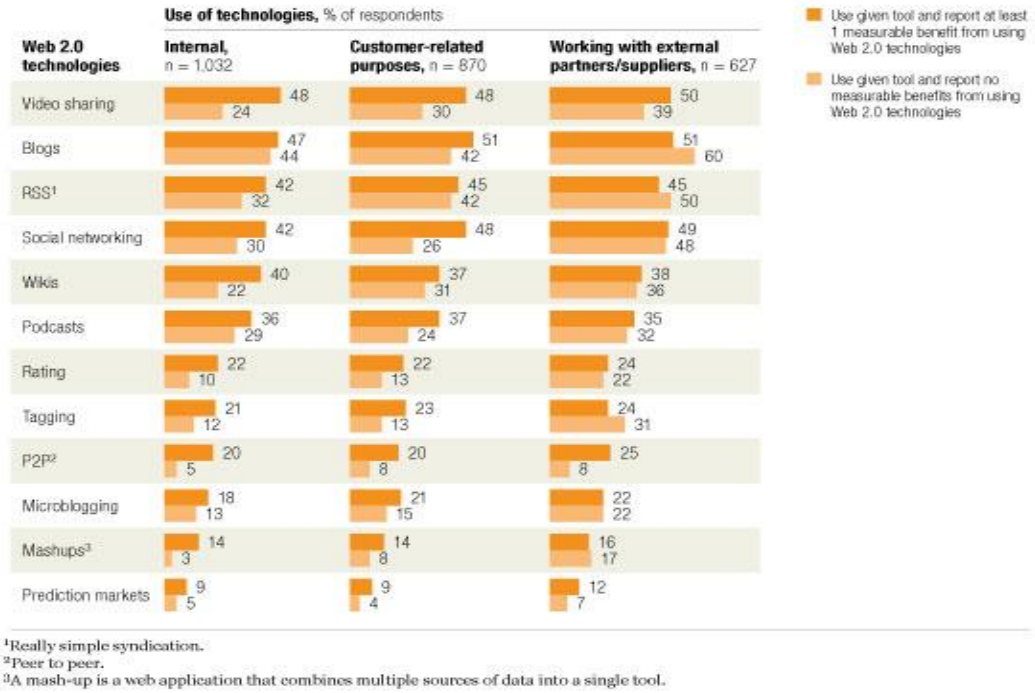


Figure 4.7 – Use of technologies (McKinsey Quarterly, September 2009)

According to respondents of the survey, web technologies have also reinforced organizational relations to customers, citing blogs and social networks as an example. Both allow organizations to distribute product or service information more actively, invite customer feedback and even participation in organizational decisions.

In fact Web 2.0 can improve and empower these platforms. But for this to happen, the structure, the conversation, the commitment, the planning, all fundamental concepts and principles change, which means an ultimate innovation from basis to the top. It is not only about technology, but also about a much deeper twist in the way people and organizations communicate and collaborate. These benefits often have a measurable effect on business.

4.3.4. Benefits and challenges

Collaborative technologies, as seen above, are spreading among online users. Depending on the organization and its overall business environment and habits, E2.0 social technologies can provide benefits to various business processes (internal and external), ranging from knowledge and innovation management to marketing and communicating with customers and suppliers.

Crucial benefits can emerge from E2.0 applications for KM and organizational-wide communication: the content generated is openly accessible and permanently visible. At the same time, there is a written dialogue between users, which means that information is consolidated and made available company-wide or for the participating group. These tools also help people find information and guidance quickly and reduce duplication of work while opening up innovation processes to more people. In addition, these technologies harness collective intelligence and the wisdom of crowds to obtain accurate answers to hard questions, since they let workers build, maintain and profit from large

social networks. Underlying all these benefits is a style of interaction and collaboration that is not defined by a hierarchy or restrained by it.

E2.0 technologies can also be used to be closer to customers and their needs, since it offers new simple and cost effective ways of contacting and engaging new or old customers. By being in constant contact with customers, ideas of adjustments on product services can be made with the help of customers feedback, which improves support and satisfaction. In addition, they make organizations more transparent and trustworthy to customers. This is possible through an easier and faster communication between company and customer, since a customer question can be answered in seconds, which solves a long time goal of managing knowledge and sharing information.

Despite these benefits, however, there can be also unfavourable factors to consider when having an E2.0 approach. According to studies by Majchrzak et al. (2013) it seems that E2.0 leads to a decrease on productivity. Also McAffee (2006), in a MIT Sloan Management Review study, clearly identifies two main bottlenecks for E2.0:

- The first is that busy knowledge workers will not use new technologies, despite training and stimulating them. There is a possibility that users just consume information, instead of also producing it. This can be a problem since these technologies are highly dependent on user adherence to have positive effect on collaboration.
- McAffee (2006) also expresses concern with the unintended outcomes that E2.0 may bring if not used correctly, since managers may not be able to control the "debate to exert unilateral control and will be used to express some level of negativity" (McAffee, 2006). This can bring some problems of confidentiality and decentralization of power, which in managers view point it may not be seen has positive.

In summary, E2.0 technologies have the potential to make both practices of knowledge work and its effects more visible. Due to the challenges these technologies bring, there will be significant differentiation in organizations that are able to exploit them.

5. PROBLEM ANALYSIS

In this chapter, the student analyses the problem presented and discusses the state of art concepts to a more practical approach used on the solution proposed. It also analyses the link between the education program and the internship motivation.

KM plays a vital role in this organization existence. LSBC is a business club that has a huge network of B2B partnerships (more than a thousand companies) and a strong need and interest to keep up to date information of stakeholders and potential new members and partnerships. It is also a promoter of events (business fairs and business meet ups) with the objective of creating close ties with companies and promote business between parties. This non-profit organization aims to facilitate the sharing of competences and new skills, primarily between Slovenia and Luxembourg and further in time reaching all EU. Consequently, LSBC is an organization that depends on management and strong source of information to generate business, therefore it should have a proper IS that encapsulates all the information that the company creates. Thus, some necessities were identified regarding LSBC use of information.

As a LSBC intern, the student self-proposed objective was to provide insights on how much LSBC can gain by adopting KM methodologies across the organization. Furthermore, there was an intention to attest the role of information has on a network-based market and then take conclusions from it.

To achieve the proposed organization objectives, the following specific goals were defined:

1. Grow a digital information culture, through an improvement of inflow and outflow communication and promotion of collaboration across LSBC
2. Define an efficient process of turning physical business cards into digital information that can be inputted in a Customer Relationship Management (CRM) software, Intrix
3. Establish a Digital Asset Management solution by defining a consensual cloud file storage platform, a hierarchized folder structure and the creation of some conventions that should be further applied

For achieving the first goal, the idea was to do an initial assessment of the current status and how information was flowing inside company. Then, to rethink and reorganize the method of sharing information on main SM streams and the company website with the objective of creating a strong digital brand sense of identity suitable with the NPO objectives.

Secondly, since its existence, LSBC has gathered an enormous amount of business cards (more than nine hundred). When a contact had to be made with a company or a representative of a company, voluntaries had to go through all the business cards one by one and sort out the matching one. That process caused an obvious problem of inefficiency and turned an apparently easy task in a huge time-consuming one. So the initial plan was to find an optimal process to do this task and then insert the data gathered of business cards into a CRM software that the organization already had.

Lastly, the third aim was a much needed improvement in the way LSBC managed their digital assets. There was a strong urge of having a central web-based platform to store and share documents of LSBC.

All documents, manuals and lists were stored in personal computers and when there was a need to share them, multiple versions of the same content were created which generated a lot of confusion and disorganization. Also many digital media files like images, videos and presentations were being misplaced due to the absence of a LSBC file system.

At the beginning of the internship, the internship mentor at LSBC suggested a goal of *analysing Social Media traffic and identifying potential opportunities and leads generation by interpreting content coming from Facebook, Twitter and the website of the organization*. After careful deliberation, it would not be a worthwhile goal whilst the first objective was not successfully achieved, due to lack of data generated by the organization regarding outflow communications. The reality of the organization was little interaction with users and insufficient traffic data to extract relevant insights, so the main challenge at this stage was to create meaningful content where people felt more connected and interacting with LSBC. Only then, when the first objective has been concluded or at least more sustained, the objective of extracting insights from SM and the LSBC website would have any interest and relevancy to study.

To summarize, the organization needed to optimize processes – evaluate actions to be as efficient as possible, optimize web page content and intervine on SM. This seemed a valuable opportunity to apply knowledge gathered when studying at Nova IMS, on the Information Management Masters.

5.1. COMMUNICATION AND COLLABORATION

The evolution of communication and marketing have been impacting companies and people lives as well as undeniable constant presence of brands nowadays. This awareness is fed through the multiple channels that have been appearing through the years, mainly since Internet was created. Information nowadays flows from everywhere, so naturally that we may not be able to even notice. Furthermore, we are constantly being bombarded with free subliminal marketing messages that influence our behaviour and our way of thinking. Therefore, marketing departments are constantly creating strategies to take advantage of this constant and unstoppable stream of information.

Communication can be simply seen as human interaction and communication with the purpose of exchanging ideas. Watzlawik & Beavin (1967) highlights the relational characteristics of human communication and shows that pairs live in self-constructed realities, which produce different perceptions of communication. The communication practice is a central part of KM, as knowledge is ciphered in peoples minds and sent through a channel (voice or text) to a receiver, where it must be deciphered and understood. The more tacit is the knowledge, the tougher is to codify it and to define a common code which the receiver of the message can comprehend. Complexity of effective tacit communication and context-specific knowledge is emphasized by the relational aspects of communication.

Several research studies have established the connection between numerous leadership related attributes and communication strategies (Crawford & Strohkirch, 2002; Howell & Higgins, 1990; Sypher, 1990; Zorn, 1991). The straightforward conclusion of these articles are that individuals which

are less comfortable with communication, are also less effective with managing knowledge activities in a social and organizational environment.

So how can this knowledge be communicated inside and outside organizations and used to further thrive collaboration? Which tools should be used to support it ? Organizations have begun to use SM, a relatively recent phenomenon, to enable participation and knowledge sharing with the aim of improving business operations. SM have increasingly become an effective tool for the communication strategies of companies, allowing to achieve many of its goals. It is crucial to have a communication strategy adapted to these factors, so that it can be possible to promote brands and attract customers.

In this context, SM can in theory support a range of KM practices. According to Panahi et al. (2013), Web 2.0 tools enable all socialization, externalization, combination and internalization processes, thus they fit entirely with the SECI model. For instance, SM has the ability to facilitate teamwork of virtual communities and also to grant a productive environment for collaboration and mutual knowledge sharing. Because of this, it has attracted the attention of organizations, communities and individuals. According to Levy (2013), SM has the potential for leveraging KM in organizations in several ways:

- Suitable for sharing in bottom-up processes and for geographically distributed teams
- Provides confidence that they will indeed find the knowledge they are seeking for
- Suits the sharing of tacit knowledge and assists in building organizational memory
- Feels intuitive for use, increasing trust all the way
- Eases knowledge capturing in working contexts

Supporting this line of argumentation, Jalonen (2014, p. 564) states that "social media enables employees to participate in collaboration activities and informal discussions within the organization". Alberghini et al. (2014, p. 256) also believe that the "use of social media helps employees fulfil their knowledge tasks and meet their objectives through informal interactions".

Bradley & McDonald (2011) in their article published by the Harvard Business Review highlight the difference between KM and SM and emphasized the importance of mass collaboration as key to extract value from SM in a KM context. In this article they identify three features of mass collaboration:

- **Social media technology** - provides the medium and means for people to share their knowledge, insight and experience on their terms
- **Purpose** - the reason people participate and contribute with their ideas, experience and knowledge. Users participate of own free will and personally in SM because they value and identify with the purpose
- **Communities** - self-forming user groups in SM. KM communities imply a hierarchical view of knowledge and are often assigned by job classification or encouraged based on work duties. SM enable the development of open groups which lack structure and creates the space for active and innovative communities

Creating mass collaboration involves more than just building technology and telling people to participate. It requires a vision, a strategy and management actions.

5.2. DIGITAL ASSET MANAGEMENT

According to the Gartner Group & Laserfiche (2007), 7.5% of all the documents get lost. Additionally, 90% of these documents are shuffled, which results in a low efficiency in time management and professionals loose almost 50% of their working time looking for files. However only 5% to 15% of their time is spent reading the needed information. This scenario does not include 7.5% of the documents that will never be found again.

For that reason, most organizations can be seen as islands of separate and dispersed data and accessing this data is often difficult, which limits effectiveness of organizations knowledge base. Various data integration options exist, including enterprise content, planning applications or web-based systems that link data and make it accessible through the organization. Before embarking on an asset management integration effort, several factors must be considered including: leveraging existing information technology investments, phased versus one-time migration to an integrated system and cultural and financial limitations.

To face this challenge, Enterprise Content Management (ECM) seems to be an important factor to take into account. ECM is the methodical gathering and organization of enterprise wide information and is used to capture, manage, store, deliver and preserve information, which permits supporting key organizational processes through an organization entire lifecycle.. It is not only a single technology, process nor a methodology, but also a dynamic combination of strategies, methods and tools.

ECM should do more than simply increase operational efficiency and support compliance but also it is meant to help grow and even transform business. There are always new kinds of content entering the organization such as video, social media and analytics. In addition, alternative deployment models, such as open source, cloud services and shared services are also realities an ECM must deal with. As a result of these volatile trends, ECM programs need to attain a higher level of maturity. Gartner & Laserfiche (2016), a world's leading research and advisory company, created a model to measure a company ECM to determine the present level of maturity, what is the goal and what steps should be taken to reach the objective (Figure 5.1). The model describes five levels of maturity, from Initial (level one) to Transformative (level five). For each level, the model examines six facets of an ECM program, which are:

1. Business focus
2. Information governance
3. User experience
4. Organization
5. Process
6. Technology

To determine an organization maturity, a level should be attributed for each of the six facets. The maturity of most facets determines an organization overall level of ECM maturity, since organizations can be at different levels for different facets.

Initially, since LSBC had no development done regarding ECM, the first level for all facets seemed the appropriate stage. The level one of ECM maturity model means that individuals and departments

implement new applications and repositories as needed, without realizing the problems that silos create and particularly the difficulty of sharing information and reusing content. Evaluation of each facet of the model for the Initial level is described on Table 5.1.

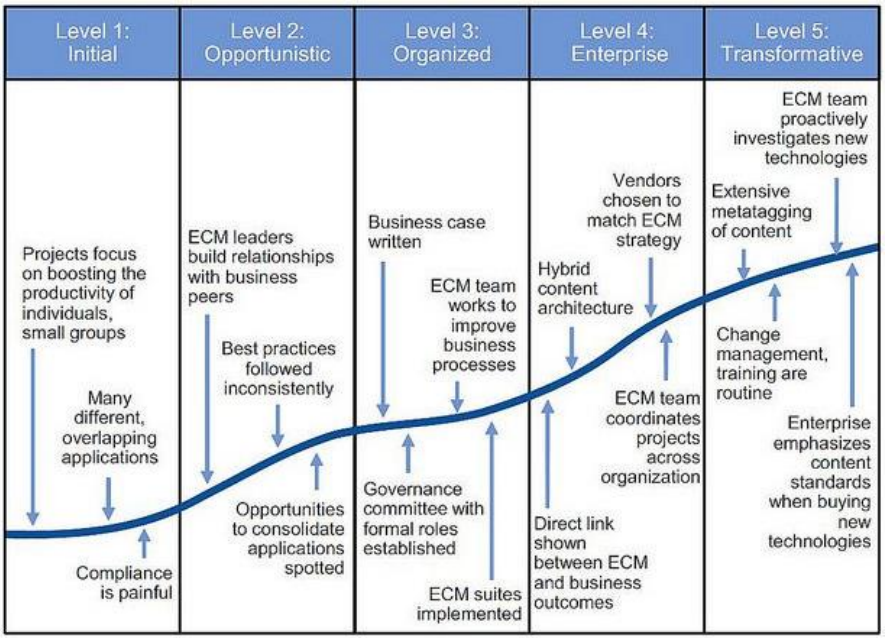


Figure 5.1 – ECM Maturity Model (Gartner, 2016)

Facet	Description
Business focus	• Projects focus on improving the productivity of small groups • Project leaders measure success in terms of what makes sense to the group or the IT organization
Information governance	• Each project manages information for itself • Information cannot be searched and used by people outside the project scope • The organization lacks content standards
User experience	• Users often cannot find the information they need and they must navigate through multiple system
Organization	• Individual departments seek resources from the IT organization as needed • The quality of work varies widely as the organization does not share best practices • Legal and regulatory requirements become painful to meet
Process	• Small steps within larger business processes • Project teams pay scant attention to how changes to one department work affect other steps in the process
Technology	• Many overlapping applications, with only basic functions. • Systems not extensible • Content management focuses mainly on documents • File shares and email are becoming unmanageable

Table 5.1 – ECM Maturity Model, Initial Level

Considering all the above points, an ECM initiative must be created from scratch, which can be achieved by gathering requisites of LSBC goals and advantages of this program to the organization, starting from bridging information gaps between departments to managing content across organization as a whole.

Most importantly, LSBC was in need of building an ECM structure to store, consolidate content such as files and all digital media (photos, videos or other rich-media assets) produced by team members. In order to do that, the necessity of having a platform to manage document files and other media seemed reasonable. An approach to ECM - Digital Asset Management (DAM) – which allowed to digitally archive the assets of LSBC, was then considered.

Digital archiving aims to preserve the accessibility of digital records through time. New technologies rapidly replace older ones driven by faster, more productive and higher capacity devices with improved functionality. This can bring difficulties of degradation and obsolescence of hardware, software and media. This obsolescence presents a challenge for access and preservation of digital information. Digital archiving should respect the lifecycle of the digital asset: Creation, Management, Distribution, Retrieval and Archive (Figure 5.2).

Nowadays, DAM is an integral organizational element that firms must adopt if they want to stay competitive. Nonetheless, many companies find it challenging to apply technological strategies to meet marketplace demands of such factors as increased competition, more customer and new sources of business opportunities coming from the Internet. To implement DAM solutions, traditional companies must be adaptable, since a DAM strategy should circle around optimal creation, usage and reuse of its assets. As asset management becomes of broad and current interest, total communication across organization becomes even more significant.

A DAM system is built upon a central repository that facilitates management of digital data and is used also to catalogue, search and retrieve digital assets. According to Beyer (2002) such a system is a filing cabinet containing individual files that are stored with detailed information or metadata about a digital asset. DAM functions as a large data warehouse in which content inventory is stored, prepared and where from it is shipped to a variety of other distribution channels. This central repository holds the digital data and serves as a library for easy retrieval and conversion to various file formats.

Figure 5.2 – Digital Asset Lifecycle

Some benefits of DAM systems (Leland, 2000, p. 62):

- Efficient production cycle
- Cost savings due to shorter print cycle and increased return on investment
- Less time spent searching for misplaced or misnamed digital files
- Organization promotion
- Increased standardization
- Tracking of relationships and use in product groups
- Efficient redistribution of intellectual property

5.3. CUSTOMER RELATIONSHIP MANAGEMENT

The key ideas behind CRM are not new - it has been debated for several decades that firms need to shift their focus from selling products to fulfilling customers needs (Levitt, 1983). According to Drucker (1996), knowledge is the only real competitive differentiator and the single meaningful resource of an organization. Xu & Yen et al (2002) further state that successful organizations use customer IS to build personalized relationships with customers and to gather information about each customer as a singular view, disregarding the amount of customers organizations have.

CRM was created to deal with the ever-expanding customer bases and segments of customers with different desires and tendencies. In that regard, it was introduced the term CRM which is a type of IS, where an integration of technologies and business processes is used to satisfy the needs of a customer during any given interaction. More specifically, CRM involves acquisition analysis and use of knowledge about customers in order to sell more goods or services and to do it more efficiently (Bose, 2002). According to Grönroos (2004) the keys of customer relationship building are:

- Security
- Feeling of control
- Sense of trust
- Low risks
- Reduced costs of being a customer

Companies are realizing they can more easily lock in customers by understanding their needs and competing with exceeded expectations, something which CRM systems can help organize (Kale, 2004). Zahay (2008) found that developing long-term customer relationships is especially important in the business-to-business sector, where a clear and focused strategy and vision are important in order to manage relationships with customer in the most effective manner.

Considering all this, almost everyday LSBC establishes contact with a huge amount of business professionals from different areas of expertise. To maximize and potentialize the relationships created, an approach focused on customer relationship seemed vital for the organization growth. In this context, it can be assumed that every partner, member and stakeholder can be classified as customer. Therefore, an effort should be considered in order to have an updated, fully functional and a rich customer database, which is mandatory for every-day operations in this organization.

6. SOLUTION

This chapter means to discuss the objectives initially proposed to the intern at the beginning of the internship and the approach on how to solve them. The actions taken mainly affected three areas of LSBC organization. Thus, this chapter is divided in three areas that address each of the objectives separately:

- **Collaboration and Communication**: creating rules and procedures to divulge digital information and shorten the gap inside and outside the organization
- **Digital Asset Management**: definition and implementation of a consensual cloud file storage platform, a hierarchized folder structure and the creation of file conventions to be further applied
- **Customer Relationship Management**: definition and implementation of an efficient process of turning physical business cards into digital information that can be input in *Intrix* CRM software

As mentioned in the literature background, IS includes software, hardware, data, people and procedures. Accordingly, LSBC results of the combination of all these factors. Considering all this, Figure 6.1 represents an approach taken by the intern, largely based on IS and E2.0 concepts defined on Literature review. The aim of this approach was to consolidate all target areas considered in objectives into an organization-wide IS, supported by E2.0 technologies. Therefore, these technologies that fit LSBC context better corresponding to each targeted area, are then defined below:

- **Collaboration** – *Trello*
- **Communication**
  - **External** – *Instagram, LinkedIn, Facebook* and *Twitter*
  - **Internal** – *Skype, Facebook Messenger* and *domovanje*
- **Digital Asset Management** – *Google Drive, Google Photos* and *Gmail*
- **Customer Relation Management** – *Intrix* and *CamCard*

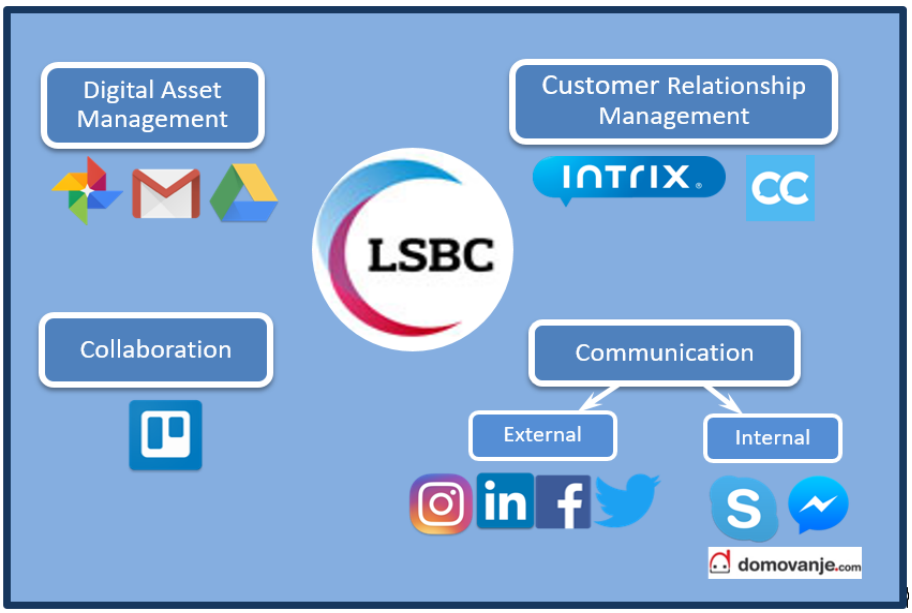


Figure 6.1 – LSBC IS E2.0 environment

6.1. COMMUNICATION AND COLLABORATION

6.1.1. Communication

Taking all this into consideration and accounting the need of cultivating sharing efforts in LSBC, the goal as an intern was to create strategies that enabled both the communication and collaboration inside and outside the organization through the use of E2.0 technologies, such as SM network sites and collaboration software tools. This would, for the external environment of the organization, create a sense of community with members of the organization and a better internal environment for knowledge sharing by facilitating and implementing platforms where that knowledge could flow effortlessly.

Thus, in an organization as LSBC where knowledge is seen as perhaps the most valuable resource, it is fundamental to promote a good communication plan. SM should be used to endorse networking and vitalize the message the organization wants to convey: what is the organization, how does the organization helps its members, what is currently its projects and to which events promotes is the kind of message vital for creating a visibility and a trust environment to all members involved.

To face this challenge, the organization had already joined some SM network sites (Facebook, Twitter and LinkedIn) and had the organizational Wordpress website. Despite that, SM networking and website of LSBC were not regularly updated and did not exist any structure for posting nor any clear definition on what to publish in each SM site. Furthermore, it could be felt a faint sense of community as well as frail engagement methodology with the audience. For that reason, in collaboration with the internship mentor, the first act was to divide the main communication and collaboration tasks into a set of tangible goals, as it follows:

- Responsibilities on sharing and managing relevant information on the all SM platforms of LSBC: Facebook, LinkedIn Group, Twitter (daily posting, creating and managing LSBC events)
- Managing the LSBC website – posting new information, identifying bottlenecks and suggesting improvements
- Enhancing the metrics of social network sites to reach more viewers, attract more opportunities and engagement from users
- Creation of an Instagram account and a YouTube channel and using it accordingly
- Creation of initiatives that allow a formation of a sense of community between all the SM listeners

6.1.1.1. Facebook, Linkedin and Twitter

LSBC SM websites should always be up-to-date with new actualized content in order to create a reliable image of the organization while generating more traffic. This is highly relevant since the audience makes judgements about the organization in a matter of seconds based on what they have seen.

Therefore, the first and fundamental objective of this internship was to manage and update the various platforms owned by LSBC (Figure 6.2). The intern did posts on a daily basis with content passed either by Mrs. Nataša Zajec or Mr. Iztok Petek, which were responsible for selecting pieces that were worth sharing. These pieces were usually news or articles relavents at the present time and frequently about Luxembourg or Slovenian industries and any new information about different business sectors LSBC worked with (e.g. Finance, Information and Communications Technology, Tourism and Space Technology). During the duration of this project, there were a lot of debate around Financial Technology (block chain) and Information and Communications Technology related matters (Annex II).

There were also several events where LSBC had the role of sponsor or co-sponsor which were significant to divulgate through LSBC SM (Annex III). In addition to this, there were also events exclusively promoted by LSBC itself, one of them hosted in Luxembourg on 25th of October 2016 in Luxembourg (Figure 6.3). This was major event related with the Financial Technology Banking Sector and it was called *Luxembourg meets Slovenian Fintech System*. It counted with the presence of important guest speakers and industry experts such as Mr. Jean-Pierre Borsa (Senior Adviser, ABBL), Mr. Matt Elton (Co-Founder, FinnoLux), Mr. Pierre-Olivier Rotheval (Head of Innovation, BIL), Mr. Johan Lönnberg (Director Business Development, Comtrade Digital) and the Head of Mission of Slovenia to the Kingdom of Belgium, Permanent Representative to the EU Political and Security Committee and Ambassador Mr. Matjaž Šinkovec.

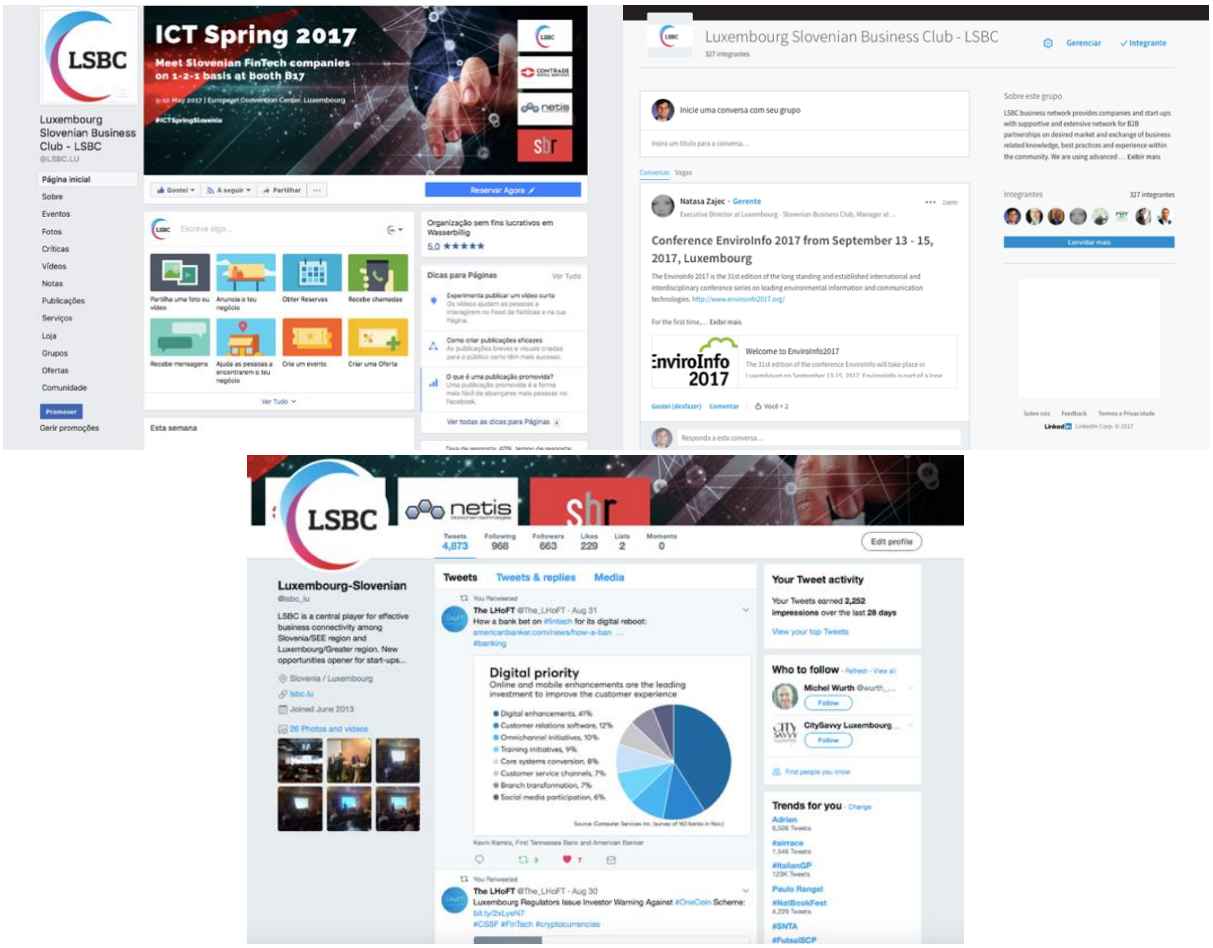


Figure 6.2 – LSBC *Facebook*, *LinkedIn* and *Twitter* sites (June 2017)

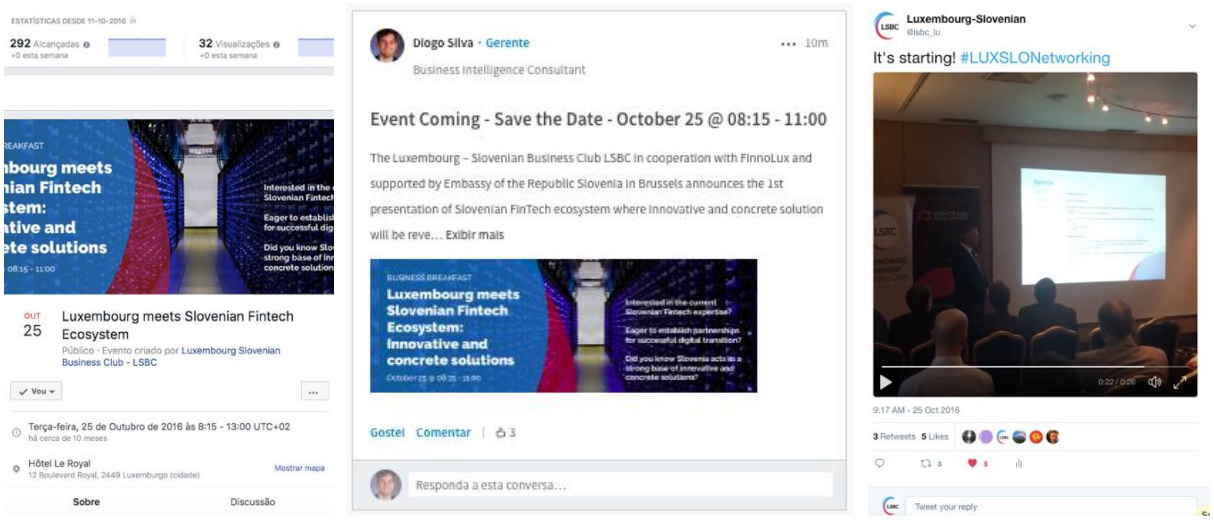


Figure 6.3 – *Facebook*, *LinkedIn* and *Twitter* campaigns for *Luxembourg meets Slovenian Fintech System* event

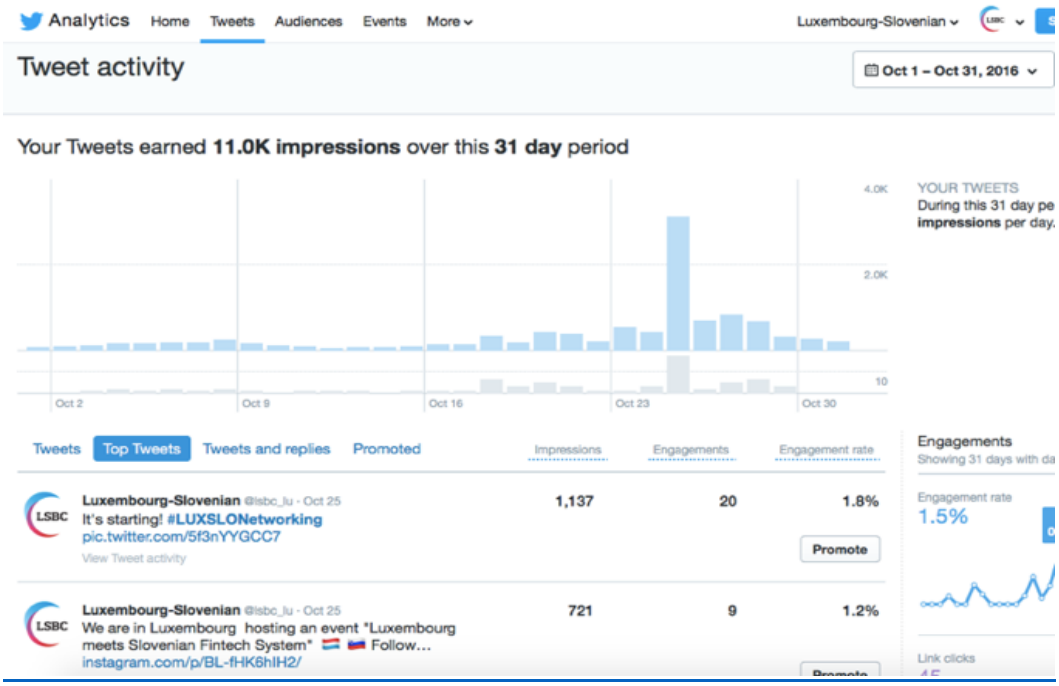


Figure 6.4 – Live tweet impression and engagement metrics - 25 th October 2016 event

This event was a successful venture organized and promoted by LSBC and exposed and matched the skillful Slovenian companies to the maturity and experience of important companies in the Luxembourgish Fintech sector. It has also appeared in various press articles (Annex IV). As one of the attendees of the conference, the intern role was to prepare LSBC media material (images, presentations and video assets) presented in the event (Annex IX), do a live coverage of the seminar and presentations using *Twitter* live feature (Figure 6.4), posting photos on LSBC *Instagram* account and in the end of the networking session posting live interviews from gathered reactions after the conference. Also, recording post-reactions to this event in form of voice memos (Annex V) was part of the role, then used in a press release.

For other campaigns, the intern participation was to define clear strategies for the creation of events on *Facebook*, plan and execute marketing event promotion for the different SM like banners (Figure

6.5) and divulgate press releases on SM. This strategies would result in a convertion of the interested audience in such events.

Also, LSBC would often appear on chronicles in Luxembourgish and Slovenian papers, which had to be properly communicated as well (Figure 6.6).

Figure 6.5 – Facebook campaign banner for LOVEAT 2016 event

Figure 6.6 – Mention in The Slovenia Times - Autumn Edition 2016

6.1.1.2. LSBC website

LSBC website is the main gateway for visitors and the representation of its presence online. For that reason, it was vital to LSBC to regularly update the website information, mainly posts and information for the different events. The selection criterion for posts and article pieces that were often the ones that gathered more views on SM sites. There were also bottlenecks and issues identified in LSBC website, either broken links or tabs that had not useful information for the visitor of the website. These issues were mainly about usability, appearance and content characteristics of the website were

identified as points of improvement as well as the structure of the website, which was changed to facilitate the navigation of the visitor. For this alterations, the intern was in close contact with Mr. Rok Dimec, the web designer that helped in such related matters.

In terms of external communication, every event created on SM sites was linked to *Events* sub-page of LSBC webpage, where information and procedures on how to attend events were detailed (Figure 6.8). Therefore, setting up this page correctly, regarding both placement and content, was of high importance, since it is based on that page that the visitor decides whether to enrol on the event. In that regard, creating a communication plan of those events as well as visual marketing (banners) and also suggesting improvements in the information structure of the event release were examples of the KM intern role.

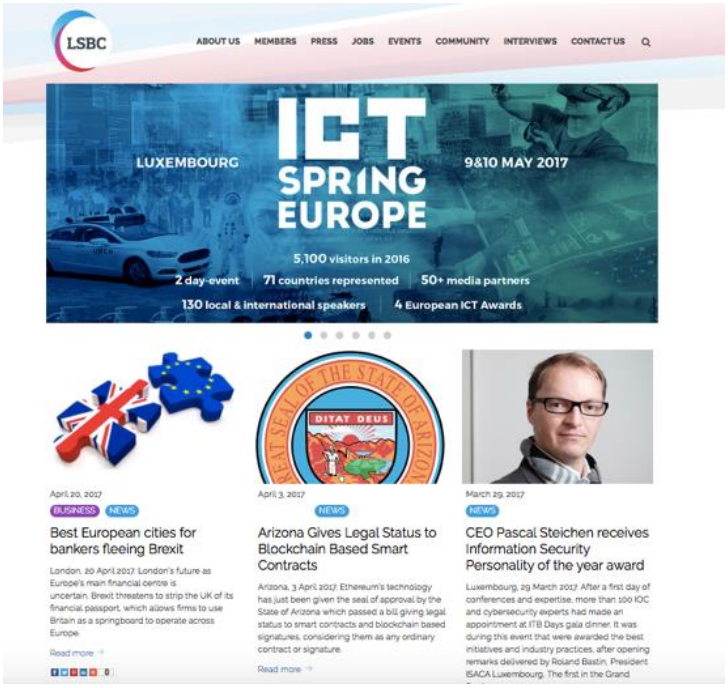


Figure 6.7 – LSBC website (June 2017)

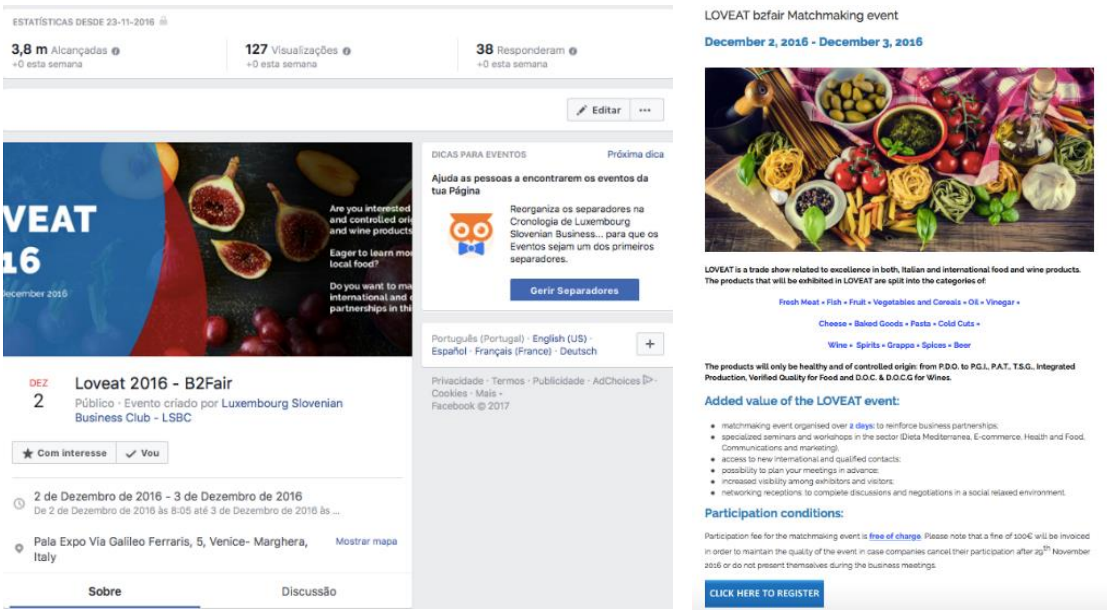


Figure 6.8 – *Facebook* and LSBC website *LOVEAT 2016* campaign

6.1.1.3. *Instagram* and *Youtube*

The creation of an *Instagram* account was also a requirement since it was an identified gap considered by LSBC as an essential SM strategic marketing tool. Instagram popularity has been growing steadily since it first debuted back in 2010. It has now more than five hundred million active users and it is currently the second most popular SM network in the world, behind only *Facebook*. *Instagram* is of high importance for an organization to share their story, their background and their vision. Instagram introduces a Human feeling in the equation since it appeals to the visual nature of Humans, who prefer to gather and interpret information through sight. Also, Instagram promotes the mobile functionality, which makes it easier to use when users are on the move. This feature highlights an in-the-moment experience, which naturally attracts more people.

Therefore, the challenge was exactly that: to create a professional *Instagram* account that reflected the personality of LSBC. The strategy was then to capture moments with club members and activities or events where LSBC was present, which would convey the message of networking capabilities.

Furthermore, it was also necessary to create a *Youtube* video channel account (Figure 6.10) that stored all videos of past LSBC events and promotion. Youtube is a great tool to raise awareness, garner willingness to join a cause and drive visibility to LSBC efforts of networking. The aim of this video account was to reveal and share LSBC past experiences and to inspire the audience. There were only two videos published, since LSBC always tries to use material that was professionally made by video production agencies.

Figure 6.9 – LSBC *Instagram* profile (July 2017)

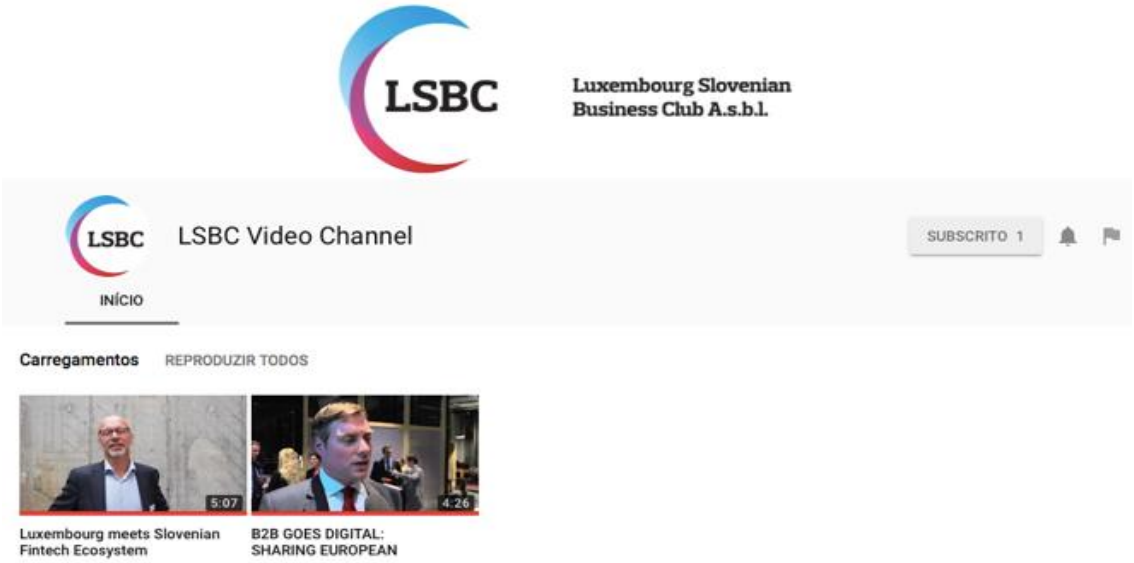


Figure 6.10 – LSBC *Youtube* video channel (July 2017)

6.1.1.4. Community

Community is widely defined as an organized group with a specific purpose. Either by a shared characteristic or interest, individuals tend to form communities of some sort. Rheingold (1993) was one of the first to identify this phenomenon: "virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace". Resuming, virtual communities are simply people connected virtually by some interest or motivation. In fact, the Human being have been using online spaces since the beginning of the Internet existence to communicate and many found the need to form bonds of some sort with others. This immediately suggest a sense of understanding others motivations that is important around a community who share the same values. This sense can be called sense of community and was characterized in a seminal study by Chavis & Newbrough (1986) which identified four core elements: membership; influence; integration and fulfilment of need and shared emotional connection.

In relation with LSBC context, it can be seen an immediate connection to how can this be applied to LSBC and its members. LSBC has an huge amount of members with different backgrounds and levels of experience. Thus, there was an absence of engagement with the LSBC community and it was fundamental to start connecting members through dialogue. It seemed the right opportunity and environment to create a strategy in which each member could relate to others. By adding this to the lack of genuine content creation in LSBC, knowledge and experience would flow inside de organization as well as outside.

In that regard, the strategy to empower the forming community movement was to create a monthly issue where a personality, in this case a member of LSBC, was interviewed. LSBC has members of different sectors, therefore making it tough to create business relationships between themselves. The objective of these interviews was to enable synergies and foment partnerships by relating other members motivations with the background and experience of the interviewee. This gave to

interviewee a possibility to introduce himself to the community and the community to know about the different people composing the business club. This initiative was called *Meet the Face Behind* and on the cover of its first issue was Mr. Roland Streber, Honorary Member of Luxembourg Slovenian Business Club and Chief Executive Officer of ProNewTech S.A (Figure 6.11).

Alongside this, a simple initiative that gathered testimonials taken from various members present on a particular event was also started. These testimonials where associated with a picture from the corresponding event and then published in SM sites as a series spaced in time. The objective of these strategies was to create persuasive pieces of content that other members saw as a social proof that LSBC has respectable reputation among its members (Figure 6.12).

To complement these initiatives, commitment was targeted to draw people to review LSBC as service and to foment participation in LSBC SM. This was obtained through a more direct and personal communication strategy and showing more emotion in every virtual social interaction.

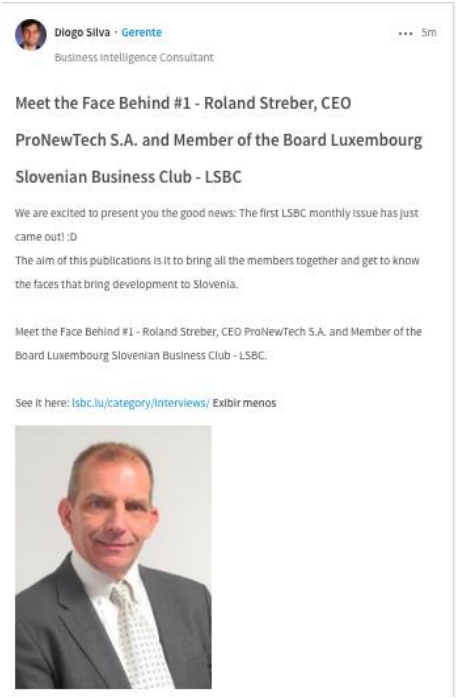


Figure 6.11 – Meet the face behind #1- First issue (February 2017)

Figure 6.12 – Series of Visit to SES - #1, #2 and #3 (February 2017)

6.1.1.5. Further strategies

Alongside with the creation and posting new content on SM sites regularly, it was important to incrementally reach more people while doing so. Thus, to connect more with users and provoke more participation on SM websites was an objective as well. As mention before, LSBC had already profiles created on *Facebook*, *LinkedIn* and *Twitter*. To understand how these SM sites could be used the best possible way, it was necessary to understand also what are they used for and their characteristics. This means, to create a consistent structure where there are clear boundaries of what is interesting to publish in the different SM sites. Taken this into account, Kietzmann et al. (2011) created a framework for SM called Social Media Honeycomb (Figure 6.13), where SM is split into seven types:

- **Identity** - amount of self-reveal
- **Conversations** - communication with others
- **Sharing** - exchange, distribution and receiving volunteer spirit
- **Presence** - availability
- **Relationships** - relation with others
- **Reputation** - social importance
- **Groups** - communities

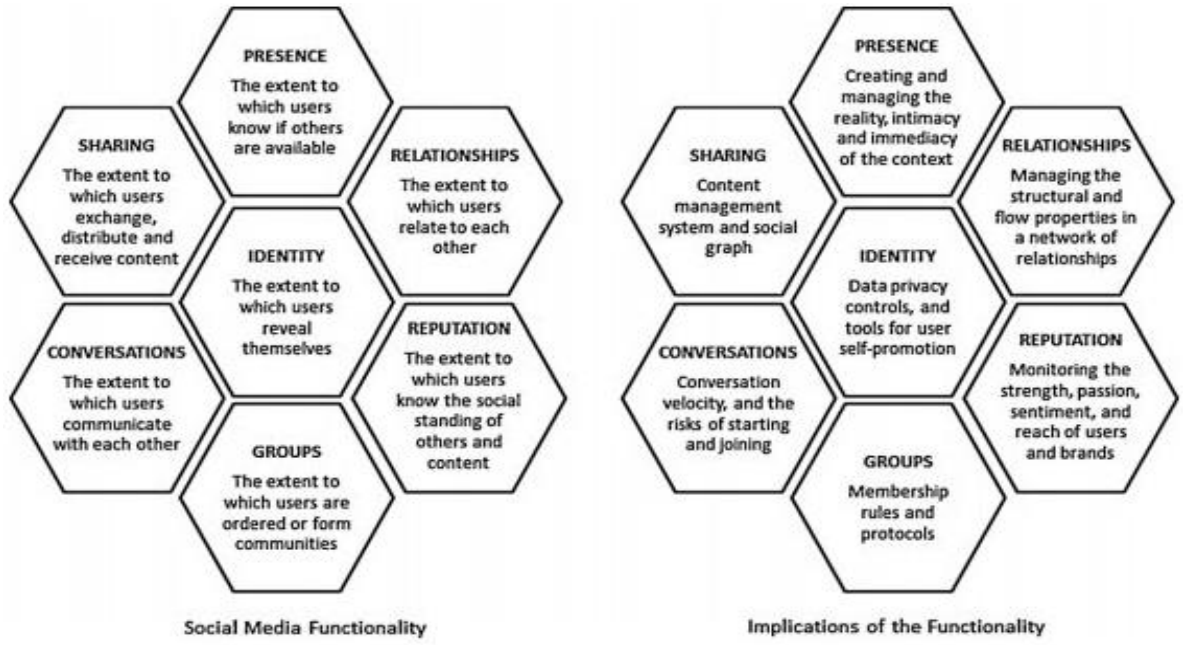
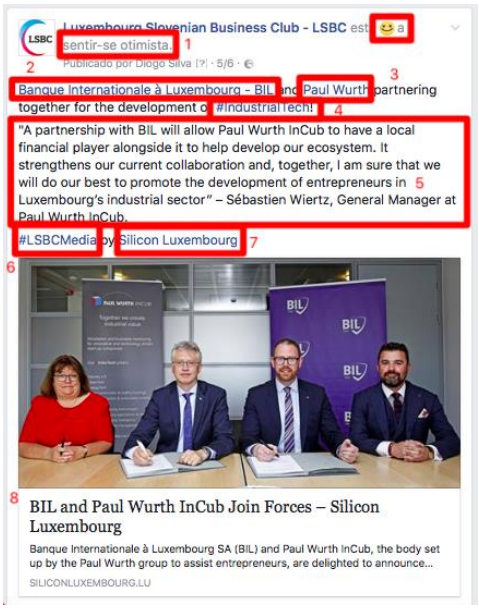


Figure 6.13 – Social Media Honeycomb (Kietzmann, 2011)

According to this methodology, LSBC SM sites can be briefly described (Table 6.1). This categorization of SM sites allowed to best target the strategies to the content creation for each platform. For instance, for a *Facebook* publication, the structure illustrated on Figure 6.14 was created.

	Facebook	*LinkedIn*	*Twitter*	*Instagram*	*Youtube*
Launched on	2004	2003	2006	2010	2005
Active Users (millions)[1]	1300	450	313	500	1000, 300 hours of new content every minute[2]
Categorization[3]	Social Networks	Business	Social Streams	Pictures	Video
Honeycomb type	Relationships	Identity	Conversations	Identity / Presence	Sharing
LSBC use	news, events and network	news and interesting opportunities for members	short engaging messages and insights	promote presence, vision and membership	videos of past events

Table 6.1 – SM sites evaluation according to Social Media Honeycomb (Kietzmann, 2011)



1 - Whenever justifiable, was introduced a feeling according to the correspondent achievement present in the picture. In this case, a partner of LSBC - Banque International à Luxembourg has signed an important cooperation agreement, so the feeling choosen was optimistic;
2, 3 - Tagging the *Facebook* page of the institution involved;
4 - Using the hashtag relevant to the post theme;
5 - Important quote of piece of the article in question;
6 - Customized hashtags. Some examples: *#LSBCMedia*, *#LSBCEvents*, *#LSBCNews*;
7 - Tagging the original publisher of the article;
8 - Linking the original piece with an according image;

Figure 6.14 – Example of *Facebook* post creation (June 2017)

In this case, by tagging institution pages, LSBC is endorsing and supporting the cooperation characterized in this joint venture of both organizations BIL and Paul Wurth. Furthermore, by creating a hashtag *#IndustrialTech* it is also connecting this article to Industrial Tech field and millions of users interested in searching for the theme.

The aim of the approach chosen was to attract new audiences as well as creating ties with the existing

[1] Social Media & User-Generated Content | Statista. (2016). Statista
[2] Press - *YouTube*. (2017). Youtube.com
[3] Solis, B. (2017) & JESS3. The Conversation Prism. The Conversation Prism. (Annex VI)

one by correctly adapting the content for each SM network. Complementing this methodology for *Facebook*, Table 6.2 shows a table with the evolution of the metrics *Followers* and *Likes* in LSBC *Facebook* page, as an example. Although this internship ended in February 2017, for this analysis it was considered the time span between October 2016 and August 2017 since it purposes to analyse the consequences of the strategy adopted, which demands a longer time frame.

Metric	Oct-16	Aug-17	% Growth
Followers	313	387	23,64%
Likes	338	418	23,67%

Table 6.2 – Growth of LSBC *Facebook* metrics (Followers and Likes) from the October 2016 to August 2017

6.1.2. Collaboration

Collaboration can be seen as a joint effort of multiple individuals or working groups to accomplish a particular task or project. Also, it normally involves the ability of two or more people to contribute to a joint task within an organization. It is easily understandable how important collaboration is for all kinds of voluntarism, since the nature of these organizations itself is to cooperate for a common goal. Web-based technologies have different structure, ways to communicate, commitment and even planning, which means ultimate innovation in collaboration from basis to the top. Using collective intelligence allows to build a solid communication and an operational task workflow so that every action and assignment becomes more effective in less time.

Looking at LSBC context, it was identified two main points of improvement regarding the collaboration inside LSBC:

1. Increase team performance by choosing a task manager software to facilitate the communication and collaboration
2. Assess the progress of the SM by creating a monthly report on SM and make it available across the organization

One of the bottlenecks was the lack of a collaboration environment since there was no control regarding task management whatsoever, which made it hard for team members to keep track of everyday assignments. Even for top members who were supervising others work, it was chaotic to manage and do follow-up meetings since its only registry were handwritten notes.

To resolve this issue, the solution proposed was to use a collaboration software called *Trello* which helped in the distribution of task as well as defining deadlines (Figure 6.15). *Trello* is a collaboration tool that organizes projects into boards and facilitates the creation of lists inside boards as well as multiple tasks. Tasks can thus be assigned to team members and commented on to originate dialogue and collaboration. This allowed to have a broad view of every task so everyone in the organization could see ongoing project details and current progress. *Trello* helped increasing LSBC team members productivity and coordination.

Thus, five boards were created in order to segment tasks into different categories of action:

- **Goals 2016** - referred to specif targets for the year 2016 and consequent plans of action
- **Goals 2017** - referred to specif targets for the year 2017 and consequent plans of action
- **Ideas/Notes** - ideas and suggestions for new improvements. Doubts were also often placed in this board
- **Main Activities** - main board where everyday tasks were attributed and managed
- **Team Availability** - where team stated their availability for the following weeks

For each board, there were a set of lists, segregating the various possible phases of a task. For instance, *To Do*, *Doing*, *Pending* and *Done* were types of stage lists in which tasks could evolve, which were adequate for the *Main Activities* board. Adding to this, there were also lists exclusively created for specific team members. For instance, Figure 6.16 shows a *Share on SM* list were every task under it is assigned to the intern responsible for SM. Finally, depending on also the label color, team members could distinguish between the different phases of the tasks:

- **Red** - still any work done
- **Yellow** - tasks currently being done
- **Orange** - task pending of some internal/external information
- **Green** - finished task

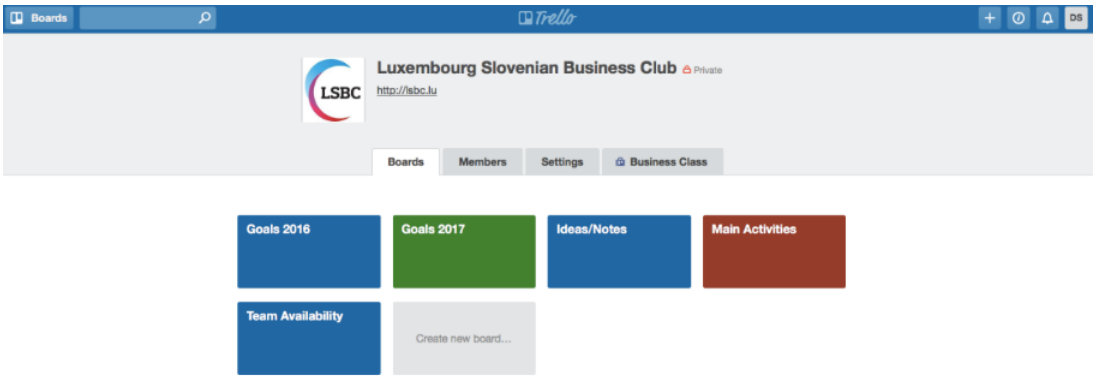


Figure 6.15 – LSBC *Trello* boards

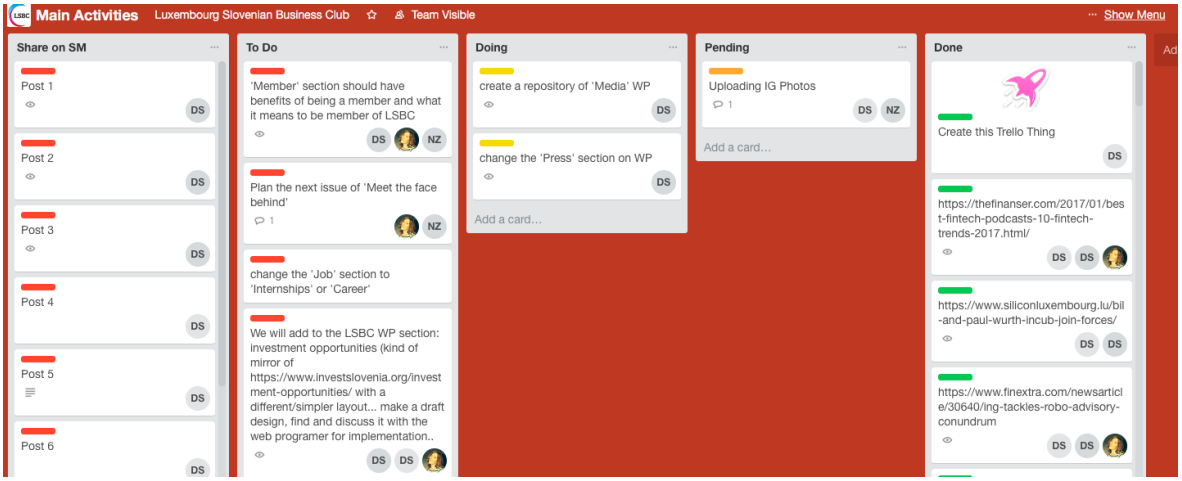


Figure 6.16 – LSBC Main Activities *Trello* board

To document processes and some conventions, the intern also created a *Trello* manual (Annex VII)

For the second collaboration objective, a monthly report was asked by Mrs. Nataša Zajec as a way of giving feedback and also to show every LSBC team member the progress on LSBC SM network metrics. Monthly report consisted of an overall evaluation of the SM sites - *Facebook*, *Twitter*, *Instagram* and *LinkedIn* - regarding main metrics of each Social Network site - *followers, likes, top posts, reach* and *page views* - and possible reasons for the observed trends. This way LSBC staff could compare the last month status against the current one and validate the methodology applied.

6.2. DIGITAL ASSET MANAGEMENT

Taking into consideration the methodology defined on the Literature review and putting all in perspective with the context of the organization, the main objective is to store files originated by the organization into a consistent, secure and organized way assuring an efficient and coherent documentation flow. In LSBC case, there was a strong need in the organization to create information as much as store it. In order to do that, a file storage platform easily scalable and sharable across the organization had to be chosen. It was also necessary to create a practical methodology based on some predefined conventions for storing files, preserving old versions and naming documents. The final result was a hierarchized folder structure with conventions that should be further applied. Nonetheless, one of the central constraint was the lack of budget for this platform, since buying a solution of a vendor was a considerable investment. To meet budget constraints, a custom solution needed to be found.

	OneDrive	***Dropbox***	***Google Drive***	***SkyDrive***	***Box***
File size restrictions?	10GB	10GB with website, none with apps	5TB	2GB	250MB for free plan
Free storage?	5GB	2GB	15GB	7GB	10GB
OS supported	Windows, Mac, Android, iOS, Windows Phone	Windows, Mac, Linux, Android, iOS, Windows Phone	Windows, Mac, Android, iOS	Windows, Mac, Android, iOS, Windows Phone	Windows, Mac, Android, iOS, Windows Phone
Sharing?	No	Just by link	Yes	Yes	No
Upload limit	10GB Both Desktop App and Website	Unlimited Desktop App, 300MB Website	10GB Both Desktop App and Website	2GB Desktop App, 300MB Website	250MB
Selective folder synchronization?	No	Simple Sharing Link	Customized Sharing and Access	Customized Sharing and Access Settings	No
Features	• Advance Synchronization • Mobile App • Web App • Search ability • Photo sharing • Document and file edition	• Selective Folder Syncing • Events Tracking, • Version History • Sharing Link • Facebook Group Integration	• Selective Folder Syncing • Events Tracking • Version History • Sharing Permissions • Commenting • Simultaneous Editing	• Events Tracking • Version History • Sharing Permission • Commenting • Microsoft Office Web Apps • Simultaneous Editing • Remote Access • OneNote App	• Key Management • Governance • Data residency

Table 6.3 – Cloud Systems – analysis of free individual plans

Therefore, the first phase was to choose one of the available online cloud software storage service. Currently, cloud technology is being adopted more widely due to its convenience and the security provided and disaster recovery capabilities of hosted solutions. Cloud services reduce IT burden, since the software and database are managed and maintained in the cloud and are designed with an open architecture that allows applications to easily integrate with third-party solutions.

Accordingly, some potential options arose: *Google Drive, One Drive, Dropbox, Sky Drive* and *Box*. Benefits and disadvantages of those clouds file storage systems had to be measured in cooperation with LSBC team members, in order to choose the one that best fitted the demand. A simple description of key characteristics of these cloud services was the first step for this process (Table 6.3).

Considering all, the key factors that weighted more when choosing the cloud service were the customized access setting, the free storage capacity and the versatility on different platforms. In addition, LSBC had already a *Google* account as the main e-mail service (*Gmail*), which facilitated the choice. Therefore, *Google Drive* was elected as cloud platform service to store documents of LSBC organization.

Furthermore, *Google Drive* combines a complete built-in office suite with cloud storage. This allows document edition, creating spreadsheets and presentations. As well as accessing and editing files from *Google Drive* website, the desktop app allows to manage files from users hard disk, where all organizing files and folders are synchronized with the cloud content, making them available anywhere. *Google Drive* desktop client also allows to easily drag and drop files into the folders while a local copy stays on the user computer, making it possible to access the file in every platform. When using *Gmail*, *Google Drive* lets the attachment be saved directly through *Google Drive*. Any files and folders can be shared with other members via email invitation or link, which allows collaboration in real time.

Despite all this benefits, *Google Drive* is not the perfect solution since it has a few bottlenecks: data security, limited space, version control, multiple users accessing and altering the same document, content availability for users that leave the organization are examples of problems that may arise when using this solution. But, since LSBC is a small scale organization, the advantages outcome the disadvantages. It is a free solution (when considering a individual plan and not a business one) and can be integrated with the *Google* account that organization already uses, both conditions mandatory. With time and as the size of LSBC increases, other platforms should be considered to cope with limited space issues and the regulatory and legal requirements of document storage.

The impact of such approach on the organization is briefly described on Table 6.4.

Benefits	Pitfalls
Files automatically shared with all team members (when placed in one correct, shared folder)	Owners of documents and folders have full rights to delete or not share
Simplicity when finding documents using either folder structure or with search	Anyone can move folders and files around (sometimes by accident)
Easy to understand sharing policy	Impossibility to know if someone had forgotten to add files to folder system
Administrator can adjust sharing settings for documents and folders	

Table 6.4 – Benefits and pitfalls of the proposed solution

After choosing *Google Drive* as the cloud service, folder hierarchy of the LSBC documentation had to be defined as well as some methodologies for naming the files (creation of naming conventions). On top of that, it was necessary to consider the creation of a method to store old versions of documents, which would function as a historical archive. Finally, the sharing policy of the files should also be shaped.

6.2.1. Folder strutucture

Regarding folder structure, the purpose was to have a simple and easily adaptable structure that reflected different areas of the organization. This would be presented in a hierarchy and it is meant to allow an intuitive navigation as in a personal computer filling system. Different colours represent different areas of domain in the organization to aid distinguish between them (Figure 6.17).

Folder hierarchy was defined as such:

- Top level department folders should have colour and a code identifying the department followed by the name of the department (e.g. *LSBC – Luxembourg Slovenian Business Club*)
    - In the Department level folders, additional sub folders are added as needed. Each sub folder also has identifying code (e.g. *LSBC>CLT - Clients*, *LSBC>PRO – Proposals*)
        - This procedure could go as deep as necessary (e.g. *LSBC>PRO>LE - Local Events*)

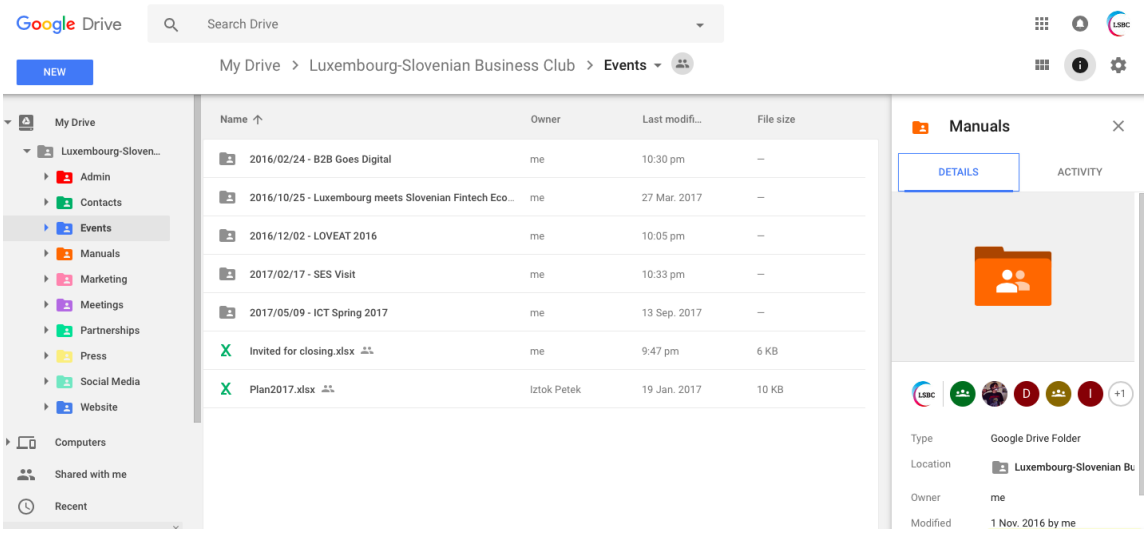


Figure 6.17 – LSBC *Google Drive* Folder Structure – Events folder

6.2.2. Naming convention

Whenever possible, filenames should contain date and document version. Filenames should follow the date structure *YYYYMMDD* and version number such as Version*X* (eg. *ICT Spring Marketing Plan_20170419_Version1.docx*). In summary, it would have the following strucure:

- *DescriptiveName*: describes the document
- *YYYYMMDD*: dates the document
- Version*X* - where *X* is the number of the version

Using the same logic, folders that had a temporal reference should also use these conventions. For instance, dating the folder *2016/10/25 - Luxembourg meets Slovenian Fintech Ecosystem* made sense since it was an event that took place in a specific date and then it is simpler to search by date considering a situation where are several event folders.

6.2.3. Sharing and privacy policies

To control the privacy and sharing of folders and documents, the creation of *Google Groups* was the suggested solution. This feature makes it possible to share documents, sites, videos and calendars to exclusive groups inside the organization. As members are being added to groups, access is automatically granted to documents or any other content previously shared. With this features, adding or removing users becomes the right procedure for security purposes, leaving the management of permissions to the administrator of the group. This provides a scalable solution for this challenge.

The adopted sharing strategy depend on the folder hierarchy. Typically, top level department folders and a subfolders and files are shared within organization for certain groups. When new documents are created, as soon as they are added to the proper shared folder, all staff automatically gains access. Confidential folders or documents can have special rules and restrictions like being only shared with department heads, who can then decide to share specific files and folders with other staff as needed. Then, six *Google Groups*, one for each level of security and department, were created (Figure 6.18):

- Accounting
- Board
- Human Resources
- Interns
- Luxembourg-Slovenian Business Club - group that administrates all the others
- Marketing

To conclude, Figure 6.19 illustrates a consolidated view of the *Google Drive* LSBC folder structure and its permissions.

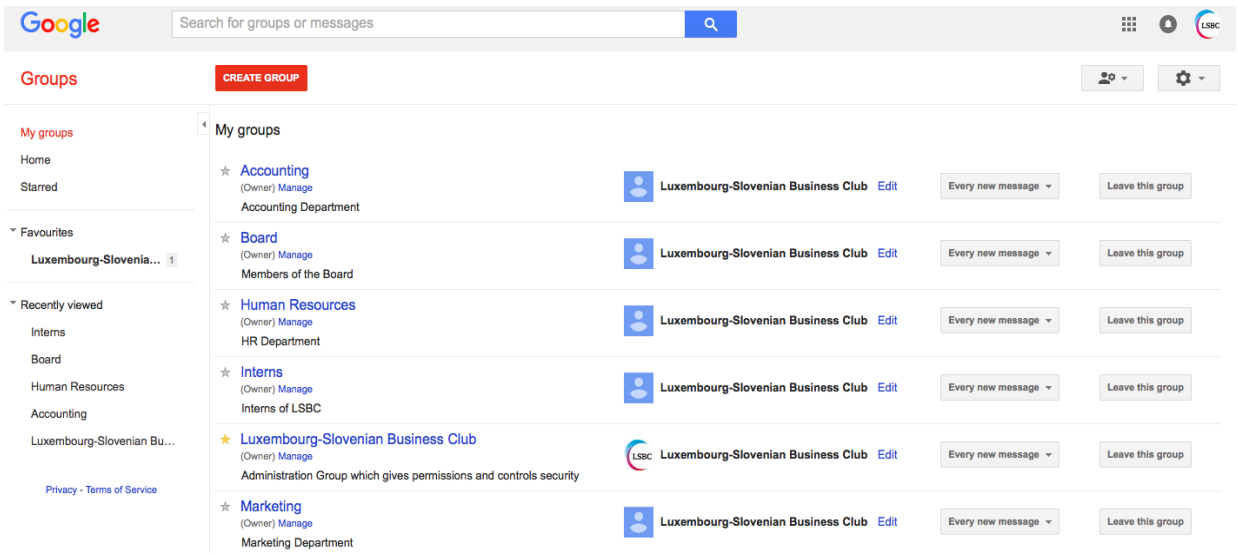


Figure 6.18 – *Google Groups* created to manage permissions

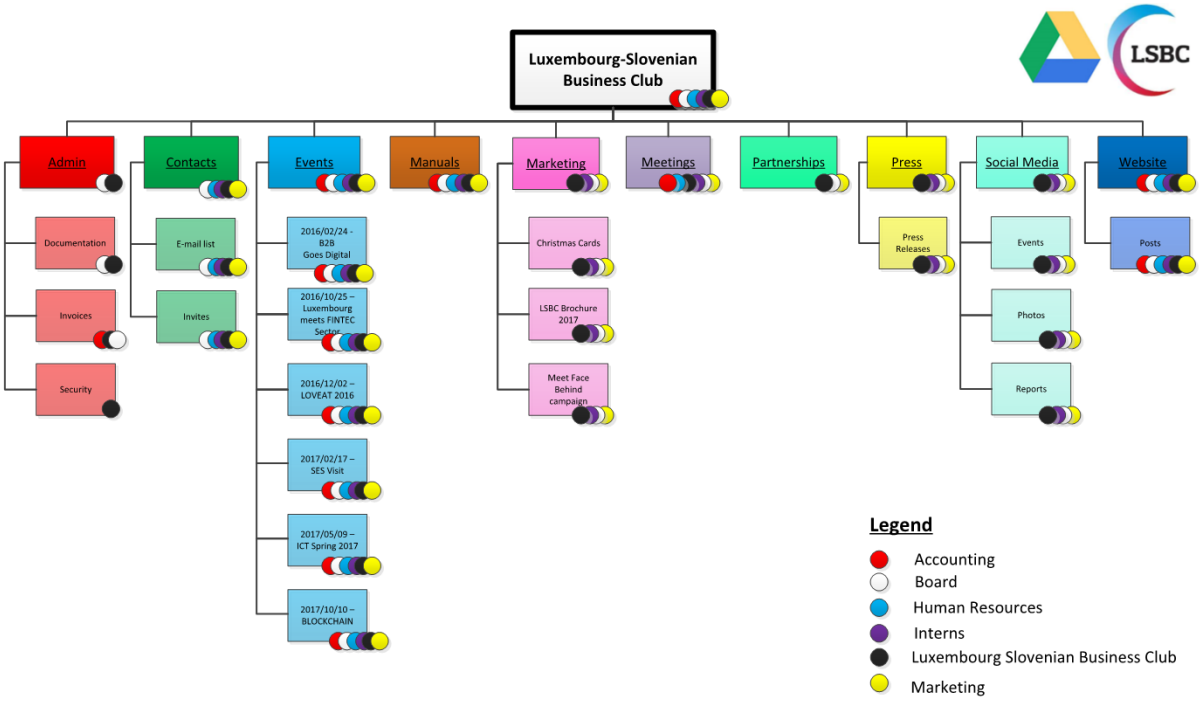


Figure 6.19 – LSBC *Google Drive*

6.2.4. Synchronization and backup

Google Drive also allows to automatically back up and synchronize documents and digital assets by turning on *Auto Backup*, which is a feature of *Google Drive*. This feature adds a special folder to the hard drive of the user computer that acts as a two-way conduit: any files or folders put there will get synced to *Google Drive* account and any files or folders added to *Google Drive* will get synced back to that special folder on the user computer (Figure 6.20).

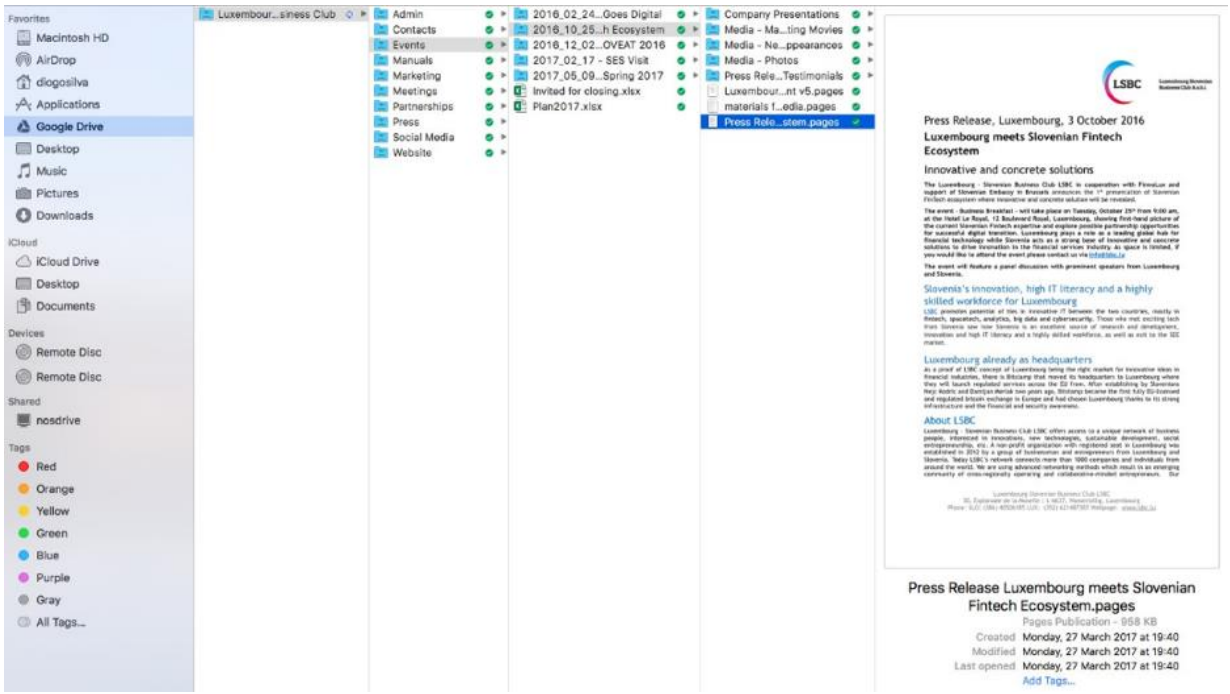


Figure 6.20 – *Google Drive* Auto Backup feature example

Furthermore, *Google Drive* has a retention policy: when a document is deleted, it can be recover within a thirty-day period. Nevertheless, if users exceed their *Google Drive* storage quota, it will no longer be possible to restore their data nor synchronizing it, since the amount of free storage each user gets is dependent on the type of account they have. Free accounts, for example, are limited to 15GB of space.

Collaboration is then the main advantage of cloud technology. Nevertheless, having a cloud backup means some undesired situations that so commonly occur in the workplace and should be avoided. Since it is so probable that multiple users work on the same file at the same time, it is also likely if some team member accidentally deletes a digital item. An Aberdeen Group Research study (2013) demonstrates that errors made by users cause 64% of data loss incidents and also that one in three companies using cloud services has lost data at some point.

Needless to point out, using *Google Drive* requires a bit of adaptation of the regular workflow. *Google Drive* is not a backup tool in the traditional sense, though its simple syncing and shareability makes it very effective.

6.2.5. Migration of documents

Migration of the majority of digital documents to *Google Drive* platform was mainly performed by Mrs. Nataša and Mr. Iztok, since they were the main proprietaries of documents and digital assets in the organization. Having the file storage application installed also helped a great deal, since it made the task of migrating documents easier. The subsequent appliance of the methodology described in the previous sections was made by the intern.

6.2.6. *Google Photos*

Finally, there was also the need to have a separate approach for digital LSBC photo material (from events, members and other campaigns). In that regard, Google has also a large distinctive repository that can conveniently store photos – *Google Photos* – and which is also easily integratable with LSBC Google account (Figure 6.21).

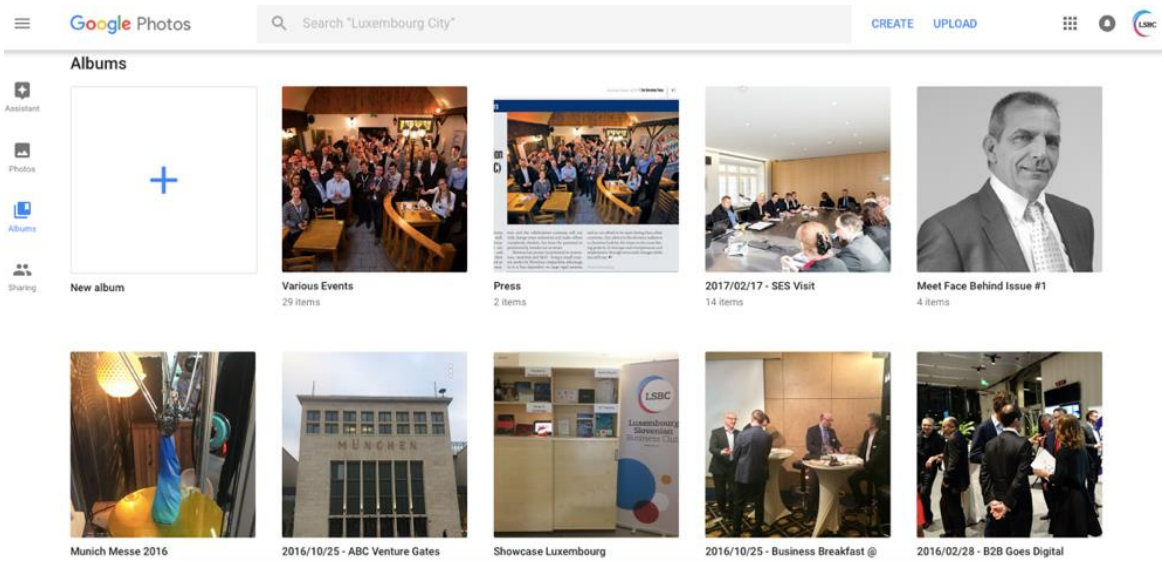


Figure 6.21 – LSBC album collection on *Google Photos*

This feature can be used to organize photos into albums, which makes it possible to search through all of them quickly. *Google Photos* automatically organizes photos by the date that has been taken and has the ability of categorizing the photos by places, dates and members pictured on them. *Google Photos* is built into *Google Drive* in a separate tab and is a convenient storage place that allows to easily share photos inside de organization.

6.3. LSBC CUSTOMER RELATIONSHIP MANAGEMENT

Following up on this objective and supported by the theoretical basis of the Literature review, the intern had to explore the solution that best fitted LSBC challenge regarding CRM. This analysis had to contemplate the different options on the market to digitalize business cards, which would have to result in a CRM software readable output. Then, the digitalized business cards should be imported and stored on the CRM software that LSBC already had, *Intrix*. *Intrix* is a Slovenian CRM tool that helps to make better decision based on data available, increases efficiency of processes and helps in project management related tasks. Despite having this tool, CRM had never been updated and was lacking crucial information about clients. Instead, information that should be available all along on the CRM tool, is nowadays present on thousands of business cards that the organization had gathered over the years.

6.3.1. Business cards

A business card is one of the most important and effective marketing tools used for networking and it is still being widely used nowadays. It can help increase the number of referrals and generate more business leads - it is even considered one of the most powerful tools for lead generation. In addition, it is perhaps the most affordable way to increase sales, since it is energy efficient, low-tech and also a compact way of making business.The two most important functions of a card are promote business in the form of chain marketing and establish an immediate business link from the first person it is given to.

There are numerous opportunities to exchange business cards: one-on-one meetings, trade shows, fairs and conventions or informal non-competing occasions.Also, business cards are used by people in big and small time business and have a typical structure that includes the name of the business person, position or occupation, company or business, address of the company or where the person does business from and multiple ways to reach contact (work phone, home number, fax number or email address).

Unfortunately, most business owners do not have a clear idea about how to use their cards effectively. Since the beginning of LSBC activity, the organization had gathered an enormous amount of business cards, more than nine hundred (Figure 6.22). Due to the fact that these business cards are in physical format, either the categorization or the retrieving of customers information becomes a truly difficult task. In an everyday situation, since it is always essential to have members information around, is not feasible to carry hundreds of business cards all the time. Therefore, LSBC acknowledged the importance of having mobile customers information and also in a digital customer database, henceforth the role of the intern in this process was to design a semi-automatic structured process of

extracting the information present on business cards by digitalizing it and transferring that information into the existing CRM software. Having this in mind, weighting in the different options for scanning the business cards was the first phase to be developed. There were two option available:

- Physical scanner targeted for business cards
- Use of an application installed personal device (mobile phone) that could read business cards, using Optical Character Recognition (OCR) technology to extract available information

A brief summary of each option evaluated is describe in the table below (Table 6.5).

	Physical Scanner	Whova	CamCard	ScanBizCards Lite
Application Type	-	Events and Marketing	Business Cards	Business Cards
Cost	Paid (depending on scanner)	Paid (price quote request)	Free	Free
Features	OCR, No flexibility nor mobility	• Highly focused on events • Creates agendas and lets the sharing of announcements /polls and media inside the events page • Also personalized communication with attendees • Business cards reader is just one of the features	• Unlimited Scanning • Send over Email • SMS and QR code • Synchronise with phone contacts • Share contact within a network • Synchronised in every platform • Accessible through Desktop	• Unlimited Scanning • Send over Email • Synchronise with phone contacts • Integrate with CRM and Evernote • Synchronised in every platform Accessible through Desktop
Android / Apple	-	Yes		
Developer	-	Whova	INTSIG Information Co.,Ltd	ScanBiz Mobile Solutions LP
Device used to digitalize	-	IPhone 5S , 8GB		
Output export format	-	CSV, Excel	CSV, Excel	CSV

Table 6.5 – Analysis of different free solutions for scanning business cards

Figure 6.22 – Business cards for digitalization

Analysing the options available, the first approach required asking for an investment to LSBC superiors and also it did not allow the scanning of new cards on the spot. The second approach had some drawbacks too, mainly not using a specific machine to bulk scan the amount of cards required and the fact that digitalizing all business cards one by one was an enormous time consuming task. Weighting all benefits and pitfalls, the decision was to exclude the first option since a lack of budget was always a constraint. After that, the second step was to search for the best suitable free digitalisation software. Adding to the ones already stated, the main requirements were flexibility and mobility, accessibility through desktop, user friendly interface and simplicity of the scanning process.

After excluding the first option, the third phase was testing out the three mobile apps remaining (Whova, CamCard and ScanBiz Cards Lite) to see which was the most fitting one for LSBC. A simple test of digitalizing the same card with three different apps was done and the results were compared. After comparing the scanning duration results, OCR efficacy, design of the application and testing with Mr.Iztok and Mrs. Nataša, the most enjoyable and easy to work with was the *CamCard* software.

As title of example, below is a image representing a business card in the digitalized format (Figure 6.23). Some key points came across while doing the digitalization process and delayed the validation of each card:

- Digitalization process consumed a lot of time (as previously expected) – each card would take on average five minutes to assure it was digitalized correctly
- Lightning conditions – if cards were not illuminated the proper way, the OCR would not recognize some characters
- Cards had front and back unleveraged information (e.g: telephone numbers on the back and addresses on the front)
- Cards had to be positioned against a contrasting background to assess the card border limits – some cards have different colours, which is more challenging and time consuming
- Some business cards had even additional handwritten information like additional e-mails or updated telephones, which had to be manually inputted

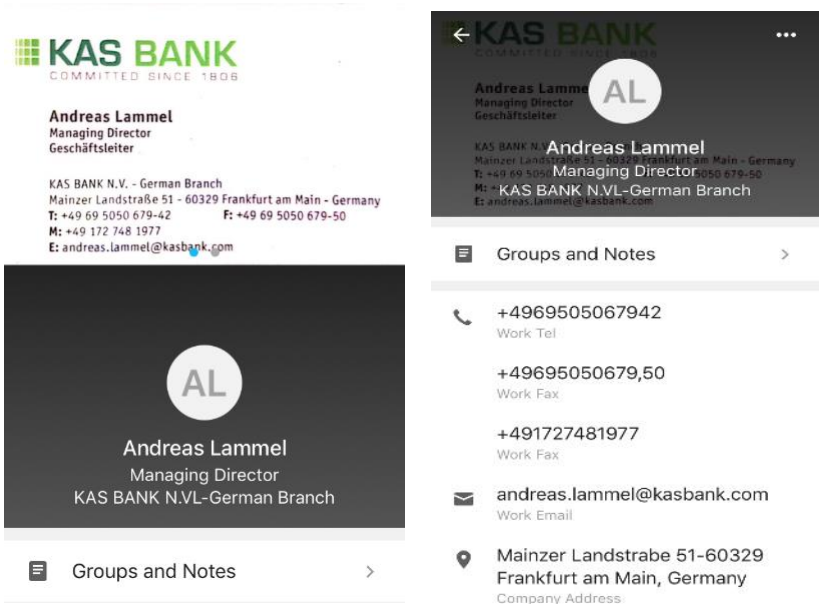


Figure 6.23 – Example of a digitalized business card on *CamCard*

Adding to this, the particularity of the Slovene alphabet had to be taken into account, since most of those special characters were not recognised at the first time. Nevertheless, to make this task a little easier, some cards had a QR code which could be immediately read by the application.

6.3.2. CRM integration

The final result of the digitalization process was now a consistent customer database on *CamCard* where every customer had at least one contact (address, phone or e-mail) and a company or organization attached. The majority of the contacts had also the country where company had its office headquarters.

After digitalizing all business cards, it was necessary to do the integration into *Intrix* CRM software. As previously guaranteed, the customer list could be exported using the web application into an Excel or *CSV* format (Figure 6.24). This was perfectly adaptable for this context since *Intrix* CRM tool allowed to import contacts via Excel.The final result of the import process was all customer data integrated and updated in *Intrix* (Figure 6.25).

To document this process it was also created a step-by-step guide to scan, store and export business cards into *Intrix* to distribute amongst all team members (Annex VIII). This guide was meant to serve as walkthrough to the process of digitalization and consequent storing of customer data.

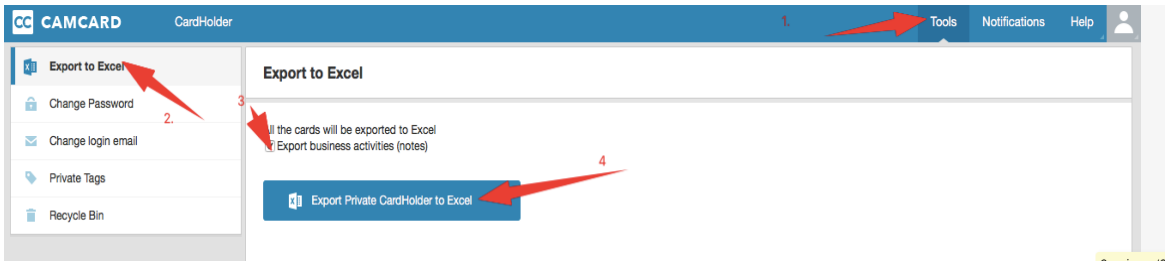


Figure 6.24 – Method to export contacts to Excel in *Camcard* software

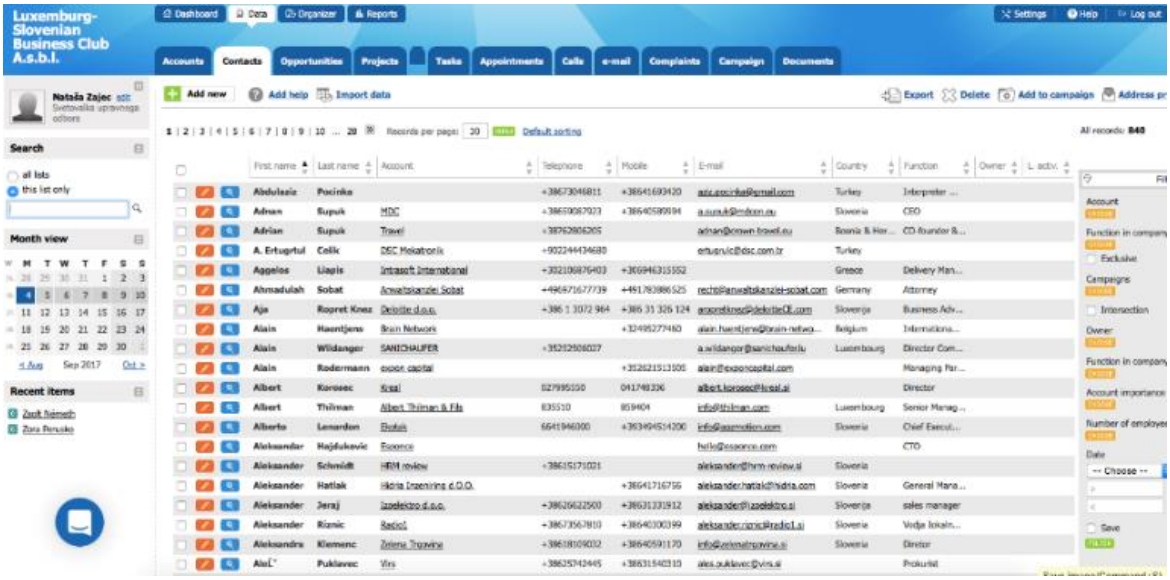


Figure 6.25 – *Intrix* CRM fully updated with customer information

7. CONCLUSION AND FUTURE WORK

This internship report addresses the results of applying KM methodologies, the tranformation of information into knowledge and the importance of managing it in a professional working environment. It starts with a state-of-the-art literature of the concepts used in the scope of this internship, then explored the practical ideas applied and finally the approach taken to solve the challenges proposed by LSBC. There was an attempt to follow a methodology characterized by first foment new ways to enable genuine valuable information creation inside and outside LSBC and then to extract knowledge from that information acquired previously. Hopefully, strategies followed during this internship were suitable to LSBC particular case.

On the whole, this project has been an enriching and rewarding experience. As a master student in Information Management – specialization on Knowledge Management and Business Intelligence – it helped assimilate into the many ways knowledge flows inside an organization and how much knowledge and information are vital to an organization. Also, working on objectives that challenged what was learned in the theoretical part of the Masters was of great importance. Thus, this project was a valuable experience to have before ending a Master program, since it added value in terms of maturity gains and real-life business context experience, which complemented the student recently started career.

From a professional view, LSBC has provided lots of space to freely explore new areas where the intern had little or no experience at all. Doing an internship in an NPO means to be exposed to diverse ways of thinking inside the EU context and several opportunities to grow adaptability and creativity. It also allowed to understand the power of teamwork collaboration and sharing. Consequently, creating an working environment based on collaboration and sharing is essential for reaching the organization goals. Also, understanding more about the different areas LSBC sponsored (Tourism, Finance Technologies, Space Technologies, etc.) was a huge educational experience. Furthermore, the communication marketing techniques developed through the use of SM and researching best solutions for the challenges proposed during the internship improved the student critical and analytical thinking spirit. Setting contingency plans for solutions was important as well, so that LSBC can be prepared for unforeseen situations. In addition to this, the internship allowed learning the importance of an effective time management through scheduling, which avoids time wastage and allows to plan ahead and gain more time as a result.

Analysing constructively the internship itself, KM, IS and E2.0 are vital concepts nowadays, since knowledge is core in any organization. In fact, knowledge resides in ones mind, but it can allow exciting new outcomes when is rightly stimulated. In a relatively new NPO, where few things are done in terms of Information Management the many possibilities of growing and achieve visible results were high incentives as an intern. Also, through the strategies adopted, LSBC can now maintain an one-to-many communication strategy with its stakeholders and club members.

Considering the accomplishment of the three objectives initially proposed, this project was a successful endeavour. LSBC CRM software has now updated customer data, SM has a strategy and framework that can be followed and there is now an adaptable, consistent and sharable DAM repository for every LSBC digital type of file. Moreover, processes of communication inside and

outside of LSBC were reviewed and LSBC has a strong identity that it is recognized by its members. Needless to say, the technical aspects of the work are not flawless and could be improved provided enough time.

With the completion of objectives proposed at the beginning of the internship, LSBC is now believed to be a better organization. As an intern, there are acknowledgements to be made to all LSBC colleagues, but mainly to Mrs. Nataša, Mr. Iztok and Ana Kosmač from whom there is a lot to be learned.

7.1. CONSIDERATIONS FOR THE FUTURE

Even though LSBC is a small organization, on some occasions there could be felt a resistance to implement change and drive colleagues to accept and be apart of it. Since the beginning of the internship, LSBC team members were exposed to many new platforms and even the task workflow changed a lot. Despite the initial expectable resistance, collaboration and task management inside LSBC team improved.

Furthermore, it was also challenging to provide solutions for the proposed objectives, since LSBC is an organization that does not take any financial profit from its activities. Better solutions usually mean investing in specialized software, but this could not be the approach of LSBC. In addition to this, the organization was too small in terms of members to really see massive gains in terms of KM. As result of that, the strategy was to implement changes that were scalable, since LSBC plans to expand the number of members and trainees. When this project ended, more students from different fields of studies (Journalism and Social Media) promptly joined LSBC, which will allow to test and validate the methodology applied.

7.2. ISSUES FOR FUTURE RESEARCH

After this project there are some key points left that should be further explored and tackled. The main topic interesting to study and that has not yet been tapped is the analysis of SM and website user generated traffic, which will allow to identify potential opportunities and generation of business leads. This was a proposed goal at the beginning of this project but then again, there were no strategies nor significant amount of data generated for analysis at the beginning of the internship. Now, with the improvement on these metrics, tactics to market different segments and conclusions regarding business value of these tools can be extracted.

As well as extracting value from user generated traffic data, it is also necessary to take relevant meaning from the newly inputted customer data in *Intrix* CRM tool. The term *customer* should not be used in traditional sense in LSBC case, since customers are seen part of the club. In this case, partnerships and a cohesive sense of community are the basis of organizations such as this. Consequently, it is key to develop the right CRM strategy so as not to loose one of its main strengths - the high value interactions and networking that LSBC has with its member.

There were also several ideas which could bring additional value to the LSBC digital brand, but still have not been put into practice yet. One of them was to produce a short film about members who have prolific partnerships with LSBC, commenting about the mutual relationship and what has been gained. Another idea was to create a series of success stories, with several LSBC members as well, that could serve as an example of the advantages of working with LSBC. Finally, there was also the suggestion of hosting a big event in Ljubljana for LSBC fifth anniversary, where every member of the club was invited and encouraged to share their experiences. The conclusion is that LSBC is more about connections and sharing of experiences than anything else.

Today, a close connection is still maintained and collaboration with LSBC is still ongoing. Then, it is possible to work on these topics mention above in a nearby future.

"Our imagination is the only limit to what we can hope to have in the future"

Charles F. Kettering

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9. ANNEXES

Annex I

Internship Agenda

Phase	Description	Start	End	Duration
	Internship at LSBC	Oct-16	Feb-17	5 months
Monthly Presential Meeting		01-Oct-16		2 hours
1	Managing SM and Website	01-Oct-16	28-Feb-17	5 months
1.1	Created the LSBC *Instagram* Account	15-Oct-16		1 day
1.2	Created the LSBC *Youtube* Account	16-Oct-16		1 day
1.3	Event in Luxembourg - "Luxembourg meets Slovenian Fintech System"	24-Oct-16	25-Oct-16	2 days
1.4	Created the LSBC *Trello* Account	26-Oct-2016		1 day
1.5	Created the LSBC *Google Photos* Account	27-Oct-2016		1 day
Monthly Presential Meeting		01-Nov-16		2 hours
2	Define a strategy to import all business cards into CRM	01-Dec-16	07-Dec-16	1 week
Monthly Presential Meeting		01-Dec-16		2 hours
Monthly Presential Meeting		01-Jan-17		2 hours
3	Implement Strategy defined in 1.2	07-Dec-16	31-Jan-17	1 month
Monthly Presential Meeting		01-Feb-17		2 hours
4	Define and establish a Digital Asset Management system	01-Feb-17	28-Feb-17	1 month

Annex II

Example of an Information and Communications Technology announcement publish by LSBC

28TH of February 2017

Luxembourg Slovenian Business Club - LSBC
Publicado por Diogo Silva [?] · 28/2 ·

Following the announcement last December, Vodafone officially released during the Mobile World Congress in Barcelona the brand new name of its incubator headquartered in Luxembourg: Tomorrow Street Innovation Center. Prime Minister of Luxembourg Xavier Bettel took the opportunity to introduce the initiative to the all world during a visit at the world's largest mobile conference.

#LSBCNews originally from Silicon Luxembourg

Tomorrow Street, The Brand New Name Of Vodafone's Innovation Center - Silicon Luxembourg

Following the announcement last December, Vodafone officially released during the Mobile World Congress in Barcelona the brand new name of its incubator...

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50 pessoas alcançadas

Promover Publicação

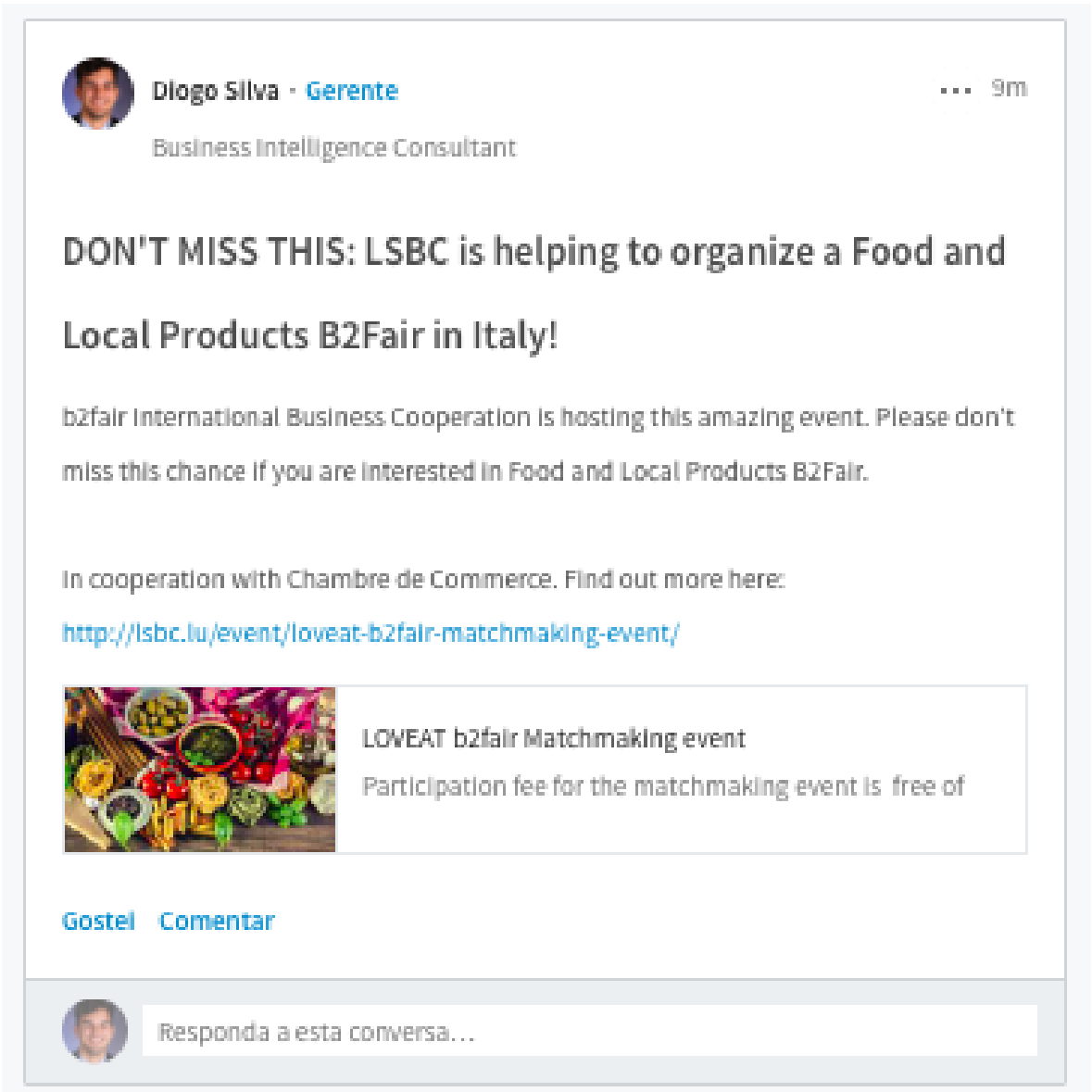
Silicon Luxembourg, Matt Elton e Natasa Zajec

Gosto Comentar Partilhar

Annex III

Example of a *LinkedIn* communication

LOVEAT 2016 event


Diogo Silva · Gerente
Business Intelligence Consultant
9m
DON'T MISS THIS: LSBC is helping to organize a Food and Local Products B2Fair in Italy!
b2fair International Business Cooperation is hosting this amazing event. Please don't miss this chance if you are interested in Food and Local Products B2Fair.
In cooperation with Chambre de Commerce. Find out more here:
http://lsbc.lu/event/loveat-b2fair-matchmaking-event/
LOVEAT b2fair Matchmaking event
Participation fee for the matchmaking event is free of
Gostei
Comentar
Responda a esta conversa...

Annex IV

Luxembourg newspaper Chronicle.lu article about the LSBC event *Luxembourg meets Slovenian Fintech Ecosystem: Innovative and concrete solutions*

25th of October 2016

Successful Launch of Luxembourg-Slovenian FinTech Initiative

Published on Wednesday, 26 Oct 2016 22:36 by C

When they digitalise, banks often focus all their attention IT part, but digitalisation also applies also to processes, culture, people and a new way of management; this realisation was one of the exciting highlights of the Business Breakfast "Luxembourg meets Slovenian Fintech Ecosystem: Innovative and concrete solutions" held on Tuesday 25 at October Hotel le Royal in Luxembourg city.

The event, organised by the Luxembourg Slovenian Business Club (LSBC), in cooperation with FinnoLux and supported by Embassy of the Republic of Slovenia in Brussels, attatracted a full-house audience, giving the attendees the opportunity to explore collaborative potential between both countries.

In his opening speech, the Slovenian Ambassador, Matjaž Šinkovec, emphasised the strong support of the Slovenian Government for Slovenian companies to enter Luxembourg market, especially in the ICT Sector.

See the opportunity being opened for all Slovenian FinTech companies

TRENDING NEWS

PCARMATURES

50 Staff Affected by PC Armatures Sàrl Bankruptcy
Construction 15 Sep, 2017 01:19

Volunteer Frogmen Sought by Emergency Services
Jobs & Appointments 14 Sep, 2017 21:57

IEE Unveils New vision at Frankfurt Motor Show
Manufacturing & Engineering
14 Sep, 2017 20:04

Luxembourg Climbs 35 Places in FIFA Rankings
Football 15 Sep, 2017 09:28

Howald and Pfaffenthal Railway Stations to Open on 10 December
Rail 14 Sep, 2017 08:25

Annex V

Transcription of voice memos taken at Luxembourg meets Slovenian Fintech Ecosystem: Innovative and concrete solutions

25th October 2016

ABBL - Impressions of Andrey and Jean-Pierre

- Andrey – *"In my option, actually this was really a great opportunity for the participants of the Luxembourg Banking System to be aware of the things which are taking place nowadays in Slovenia; to see the common opportunities for the collaboration between the countries and on the level of the enterprises, specifically to see what kind of solutions are being developed by the Slovenian enterprises. This could potentially be of interest for actors having an operation in Luxembourg and we as a Banking Association were also trying to facilitate those kinds of interactions between the FinTech companies on one side and the banks on the other side. So, my first opinion was really positive and since of course the last 5 or 7 months there were several kinds of initiatives which about FinTech and which were bringing FinTech companies from Foreign companies to Luxembourg to make them exposed to their local stakeholders and to see what kind of cooperation would pop up."*
- Jean - Pierre – "*I think also this was a very positive event because all this Slovenian FinTech companies were eager to understand how they could reach the Luxembourgish market and Financial sector so it was important for us effectively to explain at the Banking Association to set our different systems, our clusters, our match making events and our directory for FinTech in order to help to know better the Financial sector and the Financial sector to know that FinTech companies are there and are ready to help and cooperate with them. As a general wrap-up it was a very, very nice event. "*

Culture Change and Business Development - James Dakin

"One of the advantages and one of the exciting parts of the event today was the realization of the importance of Culture and Leadership on the Technology and the FinTech space. So we had a lot of conversations about what the banks could do and what the banks need to change and also a lot of recognition of the resistance within the banking community to that level of change and the importance to support the Leadership to sell the Cultural Change and their ability to lead the change so that they can stay relevant and they can stay appropriate and they can start to work with the Startups and not to see them as a threat to work against them."

Johan Lönnberg - Comtrade Digital

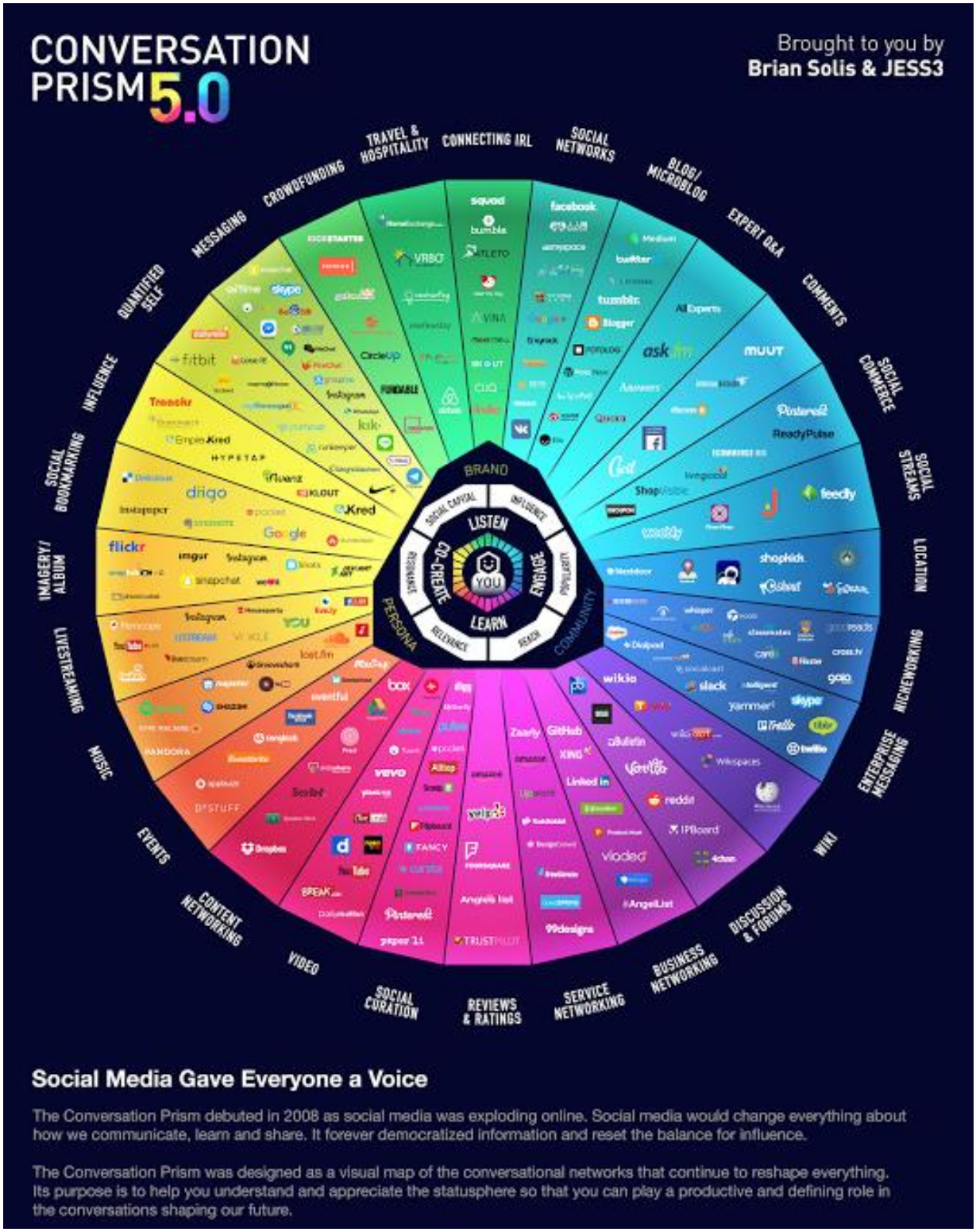
"I think it was a good opportunity to meet with some Luxembourg FinTech Banks and while where in a consolidated and small atmosphere so it was a really good opportunity to talk to the people that are relevant for the market. i think that was a great opportunity."

Pierre-Olivier Rotheval – BIL

"It has been very interesting to see how respective Ecosystems could complement each other. Here in Luxembourg we are already familiar with BitStamp, which is a major FinTech much respected here and they went through all the steps of Local Regulation and so we started with a very positive point of view on the Slovenian Ecosystem so it was really interesting to discover new companies that I didn't know of from Slovenia and I had some new contacts here so I do believe that it will be follow-ups. I think it was an opportunity for us to discover new solutions and new companies that could add value propositions and I do believe that Luxembourg could be a perfect Headquarter for companies from Slovenia. It's a win-win."

Annex VI

Conversation Prism 5.0 – Brian & JESS3



Social Media Gave Everyone a Voice

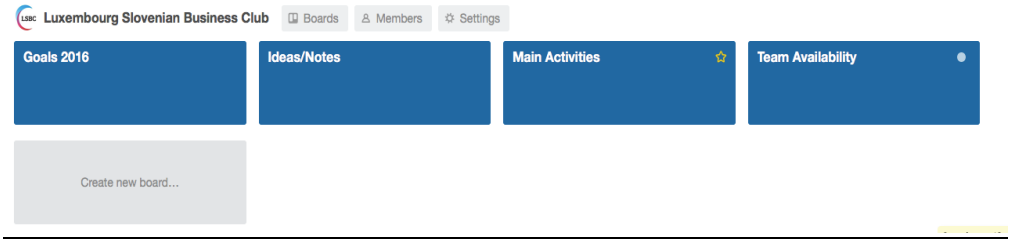
The Conversation Prism debuted in 2008 as social media was exploding online. Social media would change everything about how we communicate, learn and share. It forever democratized information and reset the balance for influence.

The Conversation Prism was designed as a visual map of the conversational networks that continue to reshape everything. Its purpose is to help you understand and appreciate the statusphere so that you can play a productive and defining role in the conversations shaping our future.

Annex VII

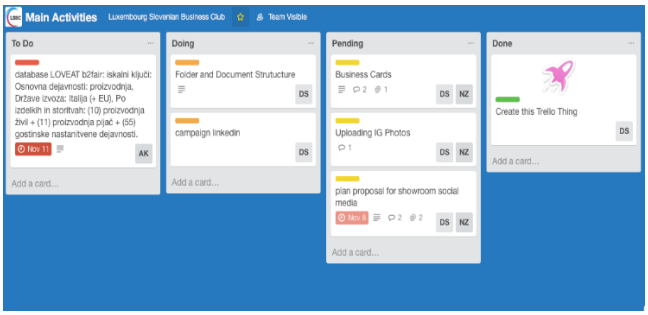
Guide to LSBC conventions in *Trello*

This guide is meant to walkthrough the conventions defining the use of Trello by LSBC's standards.

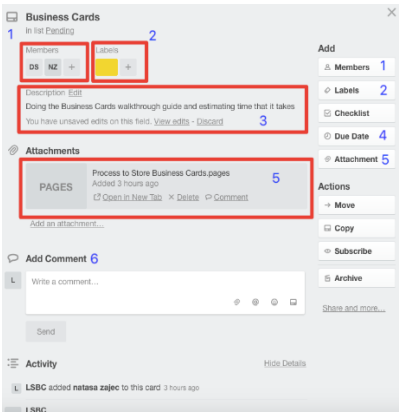


All dashboards created:

- Goals 2016
- Ideas/Notes
- Main Activities
- Team Availability



Conventions



1 - Add Members
Add people needed to complete the task.

2 - Add Labels

Red - Still not any work done
Yellow - Currently being done
Orange - Pending of some internal/external information
Green - Finished

3 - Add Description
Add the description to the task.

4 - Add Due Date
Add the date to complete the task.

5 - Add Comment
Here is the space to have a conversation about the task, if needed.

Annex VIII

Guide to Scan, Store and Export Business Cards into CRM

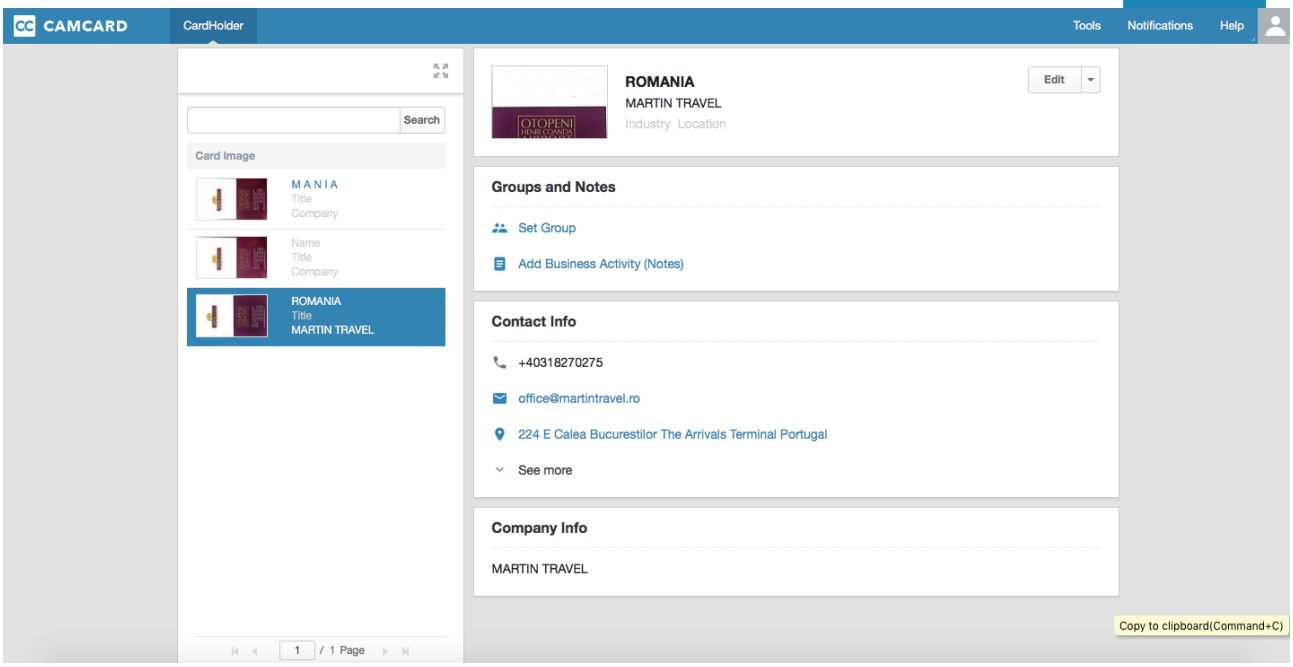
This guide is meant to walk through the process of the digitalization e consequent storing the contacts gathered through the business cards into a consistent database.

Notes:

1. It is possible to have some typos (due to the amount of cards scanned 936 cards) on some fields, like address, phone or e-mail. If that happens, it should be corrected on site/app.
2. Every cards should have at least some contact (phone or e-mail) and some name or company attached. As a principle every card as also the country of the company.
3. The cards can be sorted and categorized, if needed.
   There is a section categorized as 'not done', which are the BC that are in Russian or a language I can't translate. Those are still left for review

App used

- **CamCard** (for Iphone version 5.5.3 / for Android)
  - **Link:** https://www.camcard.com (Login for access to the cards)



Steps to Scan and Store Business Cards (5 min/unit)

1. Choose the card you want to scan;
2. Put the card against a dark background (black for instance) with the side that has the most information up;
3. Take the photo;
4. Check the data that has been automatically generated - Quality Check takes the longest
   1. Correct the typos and the erroneous fields, if any;
5. Take the photo of the back side of the card;
6. Set the specific group wanted;

Now we have the following options:

1. Save the card to contacts, Skype or E-mail by clicking on the options of the contact;

2. Export all contacts (to Excel)

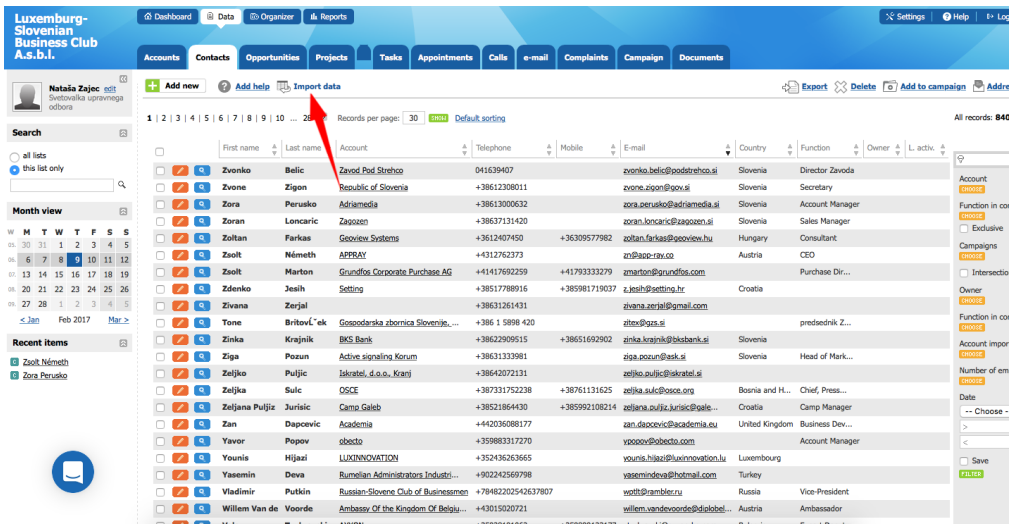
Create Time	Name	First Name	Last Name	Industry	Location	Company1	Department1	Title1	Company2	Department2	Title2	Company(Others)	Department(Others)	Title(Others)	Mobile1	Mobile2	Mobile(Others)	Telephone 1	Tele
2016-10-31	GREGA POTOKAR	GREGA	POTOKAR			ABC VENTURE GATES GMBH		CO-FOUNDER, STARTUP SCOUT										+49176438 02609	+38 222
2016-10-05	ROMANIA	ROMANIA				MARTIN TRAVEL												+40318270 275	+40 900

The resulting file will be like the one presented below:

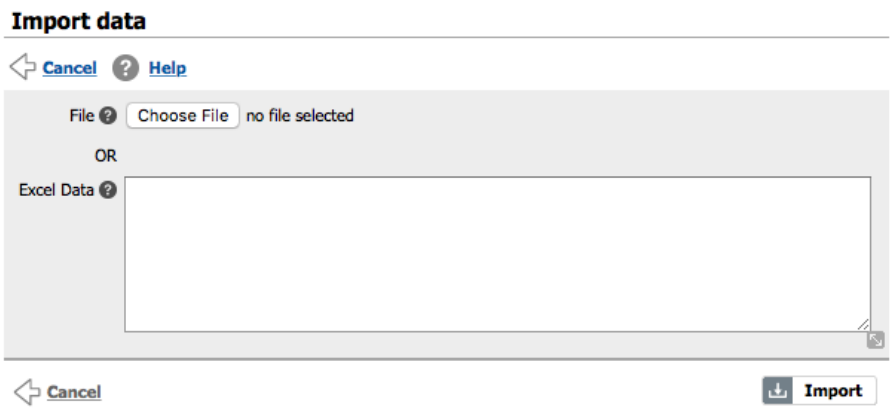
Steps to Import the BC into CRM Intrix https://lsbc.intrix.si/

According to e-mails sent by David Bombek, there are 3 steps:

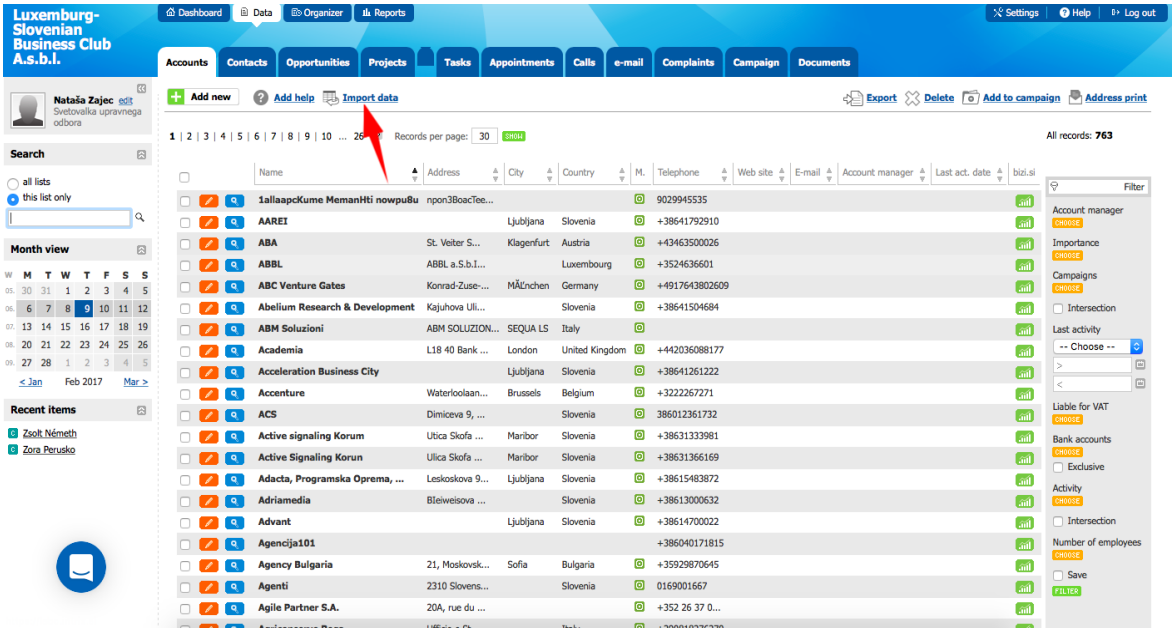
1. Delete all accounts and contacts;
2. Import all accounts (Columns Company1, Street1, City1 and Country1);



Here we have to input a CSV file with the columns above stated (file example Personal_Contacts-2.xls on Manuals Folder).



3. Import all contacts (same procedure as above)



Annex IX

Sample of the *Microsoft PowerPoint* presentation and video prepared for the event at *Luxembourg meets Slovenian Fintech Ecosystem: Innovative and concrete solutions*

25th October 2016

OCTOBER 25 @ 08:15 - 11:00

LSBC

WELCOME TO

LUXEMBOURG MEETS SLOVENIAN FINTECH ECOSYSTEM

- INNOVATIVE AND CONCRETE SOLUTIONS -

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